

HISTORICAL DICTIONARY *of the*

# HD

# GREEN

# MOVEMENT



MIRANDA SCHREURS  
ELIM PAPADAKIS

THIRD  
EDITION





# HD

HISTORICAL DICTIONARY

The historical dictionaries present essential information on a broad range of subjects, including American and world history, art, business, cities, countries, cultures, customs, film, global conflicts, international relations, literature, music, philosophy, religion, sports, and theater. Written by experts, all contain highly informative introductory essays of the topic and detailed chronologies that, in some cases, cover vast historical time periods but still manage to heavily feature more recent events.

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# **Historical Dictionary of the Green Movement**

*Third Edition*

Miranda Schreurs  
Elim Papadakis

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## Editor's Foreword

Much has been accomplished in the area of environmentalism since the previous edition, but much remains to be done. Unfortunately, some countries are putting issues such as economic progress and corporate interests ahead of the welfare of our planet—most seriously, the United States, which has always been in the forefront of the movement.

Whatever the future may bring, a review of the history and current standing of the green movement is crucial, and this is the purpose of this third edition of the *Historical Dictionary of the Green Movement*. It has been more than a decade since the previous edition, and much has changed: new legislation, political parties, and grassroots activism. The dictionary section has been updated and expanded, and recent pushback efforts are reflected in the chronology. But the extensive bibliography will most likely be the most helpful. Any book, no matter how useful, can review only crucial aspects; those who want to know more, however, can turn to the variety of sources listed in the bibliography.

This third edition, like the previous two, was written by Miranda Schreurs and Elim Papadakis. Dr. Schreurs is the chair of climate and environmental policy at the Bavarian School of Public Policy, part of the Technical University of Munich. She previously taught at the University of Maryland and from 2007 to 2016 was the director of the Environmental Policy Research Center and professor of comparative policy at the Free University of Berlin. Outside of academia, she was appointed by the German chancellor, Angela Merkel, to a committee of citizens to seek a disposal site for highly radioactive waste. Elim Papadakis, adjunct professor and visiting fellow at the Australian National University Centre for European Studies, has more than a hundred publications to his name, including two books: *Environmental Politics and Institutional Change* and *The Green Movement in West Germany*. Both authors' main area of expertise is environmental politics and policy.

Jon Woronoff  
Series Editor



## Preface

This third edition of the *Historical Dictionary of the Green Movement* follows a dozen years after the publication of the second edition. So much has happened in this time in the field of green politics that we felt a new edition was long overdue.

There are truly frightening environmental problems facing the planet. Biodiversity loss has reached unprecedented levels. Climate change is progressing so rapidly that within this century we are likely to see a substantial increase in the sea level. There has been dramatic loss of tropical rainforests. Plastic pollution is already so severe that fish, mammals, and birds are dying from the plastics they mistakenly consume. Many communities are suffering from severe air pollution, polluted drinking water, and contaminated soils.

Various movements, old and new, have taken up these and other green issues. Environmental movements, environmental nongovernmental organizations, and green parties have taken root in countries around the world. Civil society activism has taken on new strategies with the emergence of new technologies, and global networks of green activists have formed. Fifty years ago, only a handful of countries had environmental agencies. Today, all countries have some form of national environmental administration. There is also a growing number of international environmental agreements.

While these developments point to the progress that has been made, the green movement has failed to alter many of the larger societal and economic trends that are contributing to the environmental crises. This has led to calls for degrowth and simple living. A new generation of green activists is emerging and boldly criticizing the status quo. Children are going on strike at school to protest the lack of meaningful action on climate change.

At the same time, in some parts of the world, green movements that looked as though they were beginning to gain a political foothold or were doing quite well are in retreat. The reasons are complex. Some suffer from lack of funding, others from hostile political and legal environments. They are being attacked by populist politicians who see green activism as a threat to jobs.

This new edition of the *Historical Dictionary of the Green Movement* covers much new territory. It begins with a longer essay, describing trends in green politics over the past half century. And it describes recent developments related to the activities of older, more established nongovernmental organizations as well as many new environmental movements. The successes and troubles of green parties are explored, as are various green concepts and major environmental events.



The dictionary has been brought up to date, including dozens of new entries and broad international coverage of green movements and green politics. Almost all entries have been modified. In addition, the bibliography of this third edition lists environmental think tanks and environmental organizations, green parties all over the world along with links to their websites, and useful teaching resources, environmental databases, films, and documentaries. The bibliography section on green politics is arguably one of the most extensive that exists.

This work would not have been possible without the input of a group of outstanding research assistants. We thank them for all their help. Yi Hyun Kang and Milan Chen, in particular, deserve special recognition. They assisted in coordinating the project, compiling materials, checking entries for accuracy, writing numerous entries, and updating many others.

In particular, Yi Hyun Kan made major contributions to the following entries, either drafting or updating them: 1% for the Planet, 350.org, African Greens Federation, anthropocene, Arctic, Avaaz, basic income, Cambodia, Climate Action Network (CAN) International, climate justice, Convention on Biological Diversity (CBD), Deepwater Horizon oil spill, Earth hour, East Africa Green Federation, ecosocialism, fossil fuel divestment, fracking, André Gorz, Green Climate Fund (GCF), Indonesia, International Campaign to Abolish Nuclear Weapons (ICAN), International Institute for Sustainable Development (IISD), Ireland, Lao People's Democratic Republic (Laos), Elinor Ostrom, political ecology, Marina Silva, Stern Review, Sustainable Development Goals (SDGs), Uruguay, vegetarianism, Women's Earth Alliance, zero waste, and zero-energy building.

Milan Chen aided with drafting and updating the following entries: 2-degree target, C40, carbon footprint, Carbon Disclosure Project, climate induced human migration and displacement, Club of Rome, community energy, Egypt, Energiewende, European Union Emission Trading System (EU ETS), European Union Water Framework Directive (WFD), G7/G8/G20 Summits, genetically modified organisms, Global Young Greens, ICLEI-Local governments for sustainability, International institute for Environment and Development (IIED), Intergovernmental Panel on Climate Change (IPCC), Naomi Klein, land grabbing, League of Conservation Voters, nuclear waste, papal encyclical *Laudato Si*, Paris Agreement, Portugal, Redd+, Taiwan, Yasuni National Park. Madeleine Zwirello aided with the proofreading of several entries, and Sina Janßen assisted with editorial work for the bibliography.

The following individuals also helped to collect information for, and at times drafted, entries that appear in this revised and updated version of the *Historical Dictionary of the Green Movement*: Andrzej Ceglarczyk (degrowth, Poland) Anna Irmisch (sustainable investment), Chun-Yang Chen (clean development mechanism, emissions trading, joint implementation), Yi-Hsiung

Lin, Hayao Miyazaki, and Taiwan), Dongping Wang (green economy, *Under the Dome*, People's Republic of China, and Sustainability Transitions Research Network), Francesca Rosignoli (Italy), Ira Shefer (adaptation to climate change, the Fukushima nuclear disaster, greenwashing, Israel, slow food movement, C40 initiative, Energiewende, and urban gardening), Irina Stamo (Russia), Karoline Steinbacher (Austria), Natasha Donevska (Biosphere Conference, biosphere reserves, Man and the Biosphere Programme, and world heritage), Agshin Umudov and Nigar Muradkhanli (Azerbaijan), Pauline Rioussset (circular economy, Commission on Sustainable Development, cradle-to-cradle design, France, Future Earth, The Future We Want, Gaia hypothesis, green consumerism, planetary boundaries, and Rio+20), Sehee Jung (Democratic People's Republic of Korea), Weila Gong (citizen science and data governance and People's Republic of China), and Madeleine Zwirello (Canada).

Although the entries have since been updated and in some instances completely rewritten, we also acknowledge the assistance, provided on an earlier edition, by Jennifer Arthungal (Bangladesh, India, Pakistan, and Vandana Shiva), Anna Sheveland (Brazil, common-pool resources, common-property regimes, Costa Rica, Latin America, and the Caribbean region, Love Canal, and Mexico), Margaret Olsen (Central Africa, Green Belt Movement, Kenya, Nigeria, South Africa, and various African environmental groups), Jessica Olive (Agenda 21, Asia Pacific Partnership on Clean Development and Climate, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes, Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA], Convention on Biological Diversity, Convention on Long-Range Transboundary Air Pollution (CLRTAP), Kyoto Protocol, Love Canal, World Commission on Sustainable Development, Montreal Protocol on Substances That Deplete the Ozone Layer, United Nations Framework Convention on Climate Change, Vienna Convention for the Protection of the Ozone Layer, and World Summit on Sustainable Development), Casey L. Hall (Cambodia, Thailand, and Vietnam), Christine M. Shehata (Egypt), Saso Markovski (various green parties in Estonia, Latvia, and Lithuania), Dorothy Dai (Ken Saro-Wiwa and environmental websites), Vanessa Kulick (the bibliography), and Evelyn Chia (environmental websites and environmental nongovernmental organizations).

Special thanks also go to Jon Woronoff, series editor, who patiently guided this project through to completion; April Snider, senior acquisitions editor; and Kellie Hagan, senior production editor.

In order to facilitate the rapid and efficient location of information and to make this book as useful a reference tool as possible, extensive cross-references are provided in the dictionary section. Within individual entries, terms

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that have their own entries are in boldface type the first time they appear. Related terms that do not appear in the text are indicated by *see also* references. *See* references point to other entries that deal with the topic.



## Acronyms and Abbreviations

AAEA	African American Environmentalist Association
ACF	Australian Conservation Foundation
ACT	Australian Capital Territory
ALO	Alternative Liste Österreichs
ALP	Australian Labor Party
AOSIS	Alliance of Small Island States
ASEAN	Association of Southeast Asian Nations
AWF	African Wildlife Foundation
AYICC	African Youth Initiative on Climate Change
BAN	Basel Action Network
BAPA	Bangladesh Poribash Andolon
BBU	Bundesverband Bürgerinitiativen Umweltschutz
BEN	Bangladesh Environment Network
BIEN	Basic Income Earth Network
BUND	Bund für Umwelt und Naturschutz Deutschland
CAN	Climate Action Network
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CDP	Carbon Disclosure Project
CER	Certified Emission Reduction
CFCs	Chlorofluorocarbons
C-FERST	Community-Focused Exposure and Risk Screening Tool
CIEL	Center for International Environmental Law
CITNET	Citizens Network for Sustainable Development
CLRTAP	Convention on Long-Range Transboundary Air Pollution
CND	Campaign for Nuclear Disarmament
COP	Conference of the Parties

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CSD	Commission on Sustainable Development
DBU	Deutsche Bundesstiftung Umwelt
DDT	Dichlorodiphenyltrichloroethane
EANET	Acid Deposition Monitoring Network in East Asia
EDF	Environmental Defense Fund/Environmental Defense
EELV	Europe Ecologie Les Verts
EGM	Estonian Green Movement
EPA	Environmental Protection Agency, United States
ERI	EarthRights International
EU	European Union
EU ETS	European Union Emission Trading System
FEVA	La Federation des Verts Africains
G7	Group of Seven
GCF	Green Climate Fund
GEF	Global environment facility
GMO	Genetically modified organism
GNP	Gross national product
GPS	Grüne Partei der Schweiz
GPUS	Green Party of the United States
HCFCs	Hydrochlorofluorocarbons
ICAN	International Campaign to Abolish Nuclear Weapons
IET	International Emissions Trading
IISD	International Institute for Sustainable Development
INFOTERRA	International Referral System
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature and Natural Resources
JATAN	Japan Tropical Forest Action Network
LAC	Latin America and Caribbean
MIT	Massachusetts Institute of Technology
MOSOP	Movement for the Survival of the Ogoni People

MP	Member of Parliament
MPE	Mouvement populaire pour l'environnement
NAFTA	North American Free Trade Agreement
NATO	North Atlantic Treaty Organization
NDP	Nuclear Disarmament Party
NEAC	National Environmental Awareness Campaign
NEPA	National Environmental Policy Act
NGO	Nongovernmental organization
NPL	National Priority List
NRDC	Natural Resources Defense Council
ODA	Official development assistance
OECD	Organisation for Economic Cooperation and Development
OPEC	Organization of Petroleum Exporting Countries
PCB	Polychlorinated biphenyl
PEPO	Pakistan Environmental Protection Ordinance
PFCs	Perfluorocarbons
POPs	Persistent organic pollutants
POROSH	Poribest Rakkha Shopoth
PRC	People's Republic of China
PVEM	Partido Verde Ecologista de Mexico
RAC	Resource Assessment Commission
RAN	Rainforest Action Network
RFSTE	Research Foundation for Science, Technology, and Ecology
SAMFU	Save My Future Foundation
SEAC	Student Environmental Action Coalition
UDF	United Democratic Front
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNCLOS	United Nations Conference on the Law of the Sea
UNCSD	United Nations Conference on Sustainable Development
UNDP	United Nations Development Programme

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UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UTG	United Tasmania Group
WCED	World Commission on Environment and Development
WFD	Water Framework Directive
WIRE	Women in Renewable Energy Network
WRI	World Resources Institute
WWF	World Wide Fund for Nature (World Wildlife Fund)

# Chronology

**1642** Matsumoto-han in Japan establishes forest preserves.

**1666** Japanese Shogunate adopts edict against tree felling.

**1798** “Essay on the Principle of Population” by Robert Malthus published.

**1853** New York authorizes creation of Central Park.

**1863** Enactment of Alkali Act in Britain represents a novel attempt to curb emissions on a large scale.

**1864** *Man and Nature* by George Perkins Marsh published; Yosemite Valley and the Mariposa Grove of Big Trees are assigned by act of U.S. Congress to the state of California for public, resort, and recreation use.

**1865** Commons, Open Spaces, and Footpaths Preservation Society in Britain formed.

**1867** East Riding Association for the Protection of Sea Birds in Britain founded.

**1870** Association for the Protection of British Birds founded.

**1872** Yellowstone National Park created in the United States; Robert Angus Smith introduces the concept of acid rain.

**1879** Royal National Park in Australia created.

**1881** Royal Society for the Protection of Birds in Britain founded.

**1883** Natal Game Preservation Society in South Africa formed; American Ornithologists Union founded.

**1885** Banff National Park in Canada created.

**1886** New York Audubon Society founded.

**1889** Society for the Protection of Birds in Britain formed.

**1890** Yosemite National Park created in the United States.

**1892** John Muir and his associates form the Sierra Club.

**1894** Tongariro National Park in New Zealand created.

**1895** National Trust in Britain founded.

**1900** Convention for the Preservation of Animals, Birds, and Fish in Africa endorsed.

**1901** John Muir publishes *Our National Parks*; American Scenic and Historic Preservation Society founded.

**1902** Crater Lake National Park established in Oregon.

**1903** Society for the Preservation of Wild Fauna of the Empire in Britain formed; first U.S. wildlife refuge, on Pelican Island, near Florida, established, the first of 53 wildlife sanctuaries established by President Theodore Roosevelt.

**1905** National Audubon Society in the United States formed; Grand Canyon National Park established in the United States.

**1906** U.S. Pure Food and Drug Act enacted.

**1907** Inland Waterways Commission in the United States established.

**1908** Conference of Governors on Conservation held at the White House, Washington, DC.

**1909** Wildlife Preservation Society in Australia founded; Swiss League for the Protection of Nature created; Swedish Society for the Protection of Nature formed; North American Conservation Congress held in Washington, DC; International Congress for the Protection of Nature convened in Paris.

**1913** Consultative Committee for the International Protection of Nature in Switzerland formed; British Ecological Society founded; Garden Club of America established.

**1914** Swiss National Park established; Mountain Trails Club in Australia formed.

**1916** U.S. National Park Service established.

**1918** Save the Redwoods League founded in California.

**1919** National Parks and Conservation Association founded in United States.

**1922** International Committee for Bird Protection (later named International Council for Bird Preservation) founded.

**1924** First Wilderness Area designated in Gila National Forest in New Mexico, United States.

**1926** Council for the Protection of Rural England founded.

**1929** Migratory Bird Conservation Act passed; U.S. Forest Service promulgates first formal wilderness policy.

**1930** U.S. Food and Drug Administration created; Meuse River Valley smog incident kills 70 and makes thousands ill in Belgium.

**1933** International Conference for the Protection of Fauna and Flora held in London; Civilian Conservation Corps formed in the United States; Tennessee Valley Authority and Soil Conservation Service begin in the United States; Dust Bowl storms on the U.S. Great Plains.

**1934** International Office for the Protection of Nature created; Wild Bird Society of Japan founded; first lawsuits filed for workers who contracted silicosis while working for a West Virginia hydroelectric tunneling project.

**1935** Wilderness Society founded in the United States by Aldo Leopold and Arthur Carhardt; Nazi government enacts the Reich Nature Protection Law (*Reichnaturschutzgesetz*).

**1936** National Wildlife Federation founded in the United States.

**1937** Federal Aid in Wildlife Restoration Act passed by U.S. Congress.

**1944** Soil Conservation Society of America founded.

**1946** International Whaling Commission formed.

**1948** International Union for the Protection of Nature formed (name changed in 1956 to International Union for Conservation of Nature and Natural Resources).

**1949** *A Sand County Almanac* by Aldo Leopold published; United Nations Scientific Conference on the Conservation and Utilization of Resources held at Lake Success, New York.

**1951** The United States begins testing nuclear weapons.

**1952** Britain begins testing nuclear weapons; “killer fog” kills thousands in London.

**1953** The Soviet Union begins testing nuclear weapons.

**1954** The United States conducts a hydrogen bomb test on Bikini Atoll, and radioactive dust falls on the population of the Marshall Islands.

**1956** Clean Air Act enacted in Britain.

**1957** National Council for the Abolition of Nuclear Weapons Tests and of the Emergency Committee for Direct Action against Nuclear War in Britain created in response to the conducting of nuclear tests on Christmas Island; article by J. B. Priestley titled “Britain and the Nuclear Bombs” published in the *New Statesman*; International Atomic Energy Agency founded.

**1958** Committee to launch the Campaign for Nuclear Disarmament (CND) formed; the first of a series of marches organized by the CND between Aldermaston and London.

**1959** Antarctic Treaty signed with a view to using the territory for peaceful purposes only.

**1960** Organization of Petroleum Exporting Countries (OPEC) formed.

**1961** Around 150,000 people assemble in Trafalgar Square at the end of a Campaign for Nuclear Disarmament (CND) march from Aldermaston to London; World Wildlife Fund founded; Arusha Conference on Nature Conservation held in Africa; first compensation payments to victims of mercury poisoning at Minamata, Japan, provided.

**1962** *Silent Spring* by Rachel Carson published; first World Conference on National Parks held in Seattle, Washington.

**1963** Partial Nuclear Test Ban Treaty signed.

**1964** U.S. Wilderness Act passed.

**1966** U.S. Endangered Species Protection Act passed.

**1967** Collision of the oil tanker *Torrey Canyon* with rocks off the southwestern coast of England leads to oil pollution on the shores of Cornwall and of Brittany; Environmental Defense Fund founded in the United States.

**1968** African Convention on the Conservation of Nature and Natural Resources signed by 33 African states that were members of the Organization of African Unity; convention of the Biosphere Conference in Paris to discuss the impact of human beings on the environment; creation of the Club of Rome to examine the interrelationships between factors such as economic growth, the environment, population, resources, and industrialization; *The Population Bomb* by Paul Ehrlich and “The Tragedy of the Commons” by Garrett Hardin published.

**1969** David Brower leaves the Sierra Club to form Friends of the Earth; Don’t Make a Wave Committee in Vancouver, Canada, a precursor of Greenpeace, formed; Union of Concerned Scientists founded.

**1970** Friends of the Earth established in London and Paris; first Earth Day attracts around 20 million people to protests held around the United States; Environmental Protection Agency (EPA) created in the United States.

**1971** Save the Whales created; Gaucha Association for the Protection of the Natural Environment founded, and a green social movement emerges in Brazil; *The Closing Circle: Nature, Man, and Technology* by Barry Commoner



published; Greenpeace Foundation created following protests against nuclear tests off the coast of Alaska by the U.S. government; Department of the Environment, Canada, established.

**1972** *The Ecologist* magazine publishes *A Blueprint for Survival* by Edward Goldsmith and his collaborators, and *The Limits to Growth* by Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, and William W. Behrens III; protests by Greenpeace held against nuclear weapons tests by the French government in the Mururoa Atoll; United Nations Conference on the Human Environment, convened in Stockholm; United Nations Environment Programme, the first United Nations (UN) agency with headquarters located in a developing country, formed; Convention concerning the Protection of the World Cultural and Natural Heritage signed in Paris; ratification in London of the Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter (London Dumping Convention) occurs; Negative Population Growth founded; dichlorodiphenyltrichloroethane (DDT) banned in the United States; citizens of Neuchatel in Switzerland oppose the building of a new highway, contest the communal elections, and win 8 of the 41 seats in the local parliament; United Tasmania Group formed in response to the destruction of Lake Pedder in Tasmania in order to promote a hydroelectric system; citizens' initiative umbrella organization, Bundesverband Bürgerinitiativen Umweltschutz, founded in the Federal Republic of Germany; Values Party in Wellington, New Zealand, the first party to be established at the national level that champions both environmental protection and participatory democracy, formed; India introduces Wildlife Protection Act (amended in 1991).

**1973** The Organization of Petroleum Exporting Countries (OPEC) initiates a steep increase in the price of oil, which leads Western countries to consider rapid expansion in the construction of nuclear power plants; the declaration by the electricity industry that it would build a nuclear power station near the village of Brokdorf in Schleswig-Holstein, Federal Republic of Germany, signals the beginning of a dispute that was crucial in the development of anti-nuclear protests in Europe; the Chipko Andolan protest movement involving mainly women in Indian villages emerges; Convention on International Trade in Endangered Species of Wild Flora and Fauna held; Ecologie et Survie, which went on to run in elections to the National Assembly in Alsace, France, formed; the party called People in Britain, which later became the Green Party, founded; *Small Is Beautiful: Economics as If People Mattered* by E. F. Schumacher published; Endangered Species Act enacted in the United States; Cousteau Society founded.

**1974** Rene Dumont, as the representative of environmental groups, runs in the French presidential elections on an environmental platform; Karen Silkwood, a worker at the Kerr-McGee plutonium plant in Oklahoma, dies under mysterious circumstances; Environmental Policy Institute founded in the United States; F. Sherwood Rowland and Mario Molina present the argument that the release of chlorofluorocarbons (CFCs) into the atmosphere destroys the ozone layer; India introduces Prevention and Control of Water Pollution Act.

**1975** Mass protests against the proposal to construct a nuclear power station at Kaiseraugst, Switzerland, held; *The Monkey Wrench Gang* by Edward Abbey published; Worldwatch Institute founded.

**1976** Mass protests against the proposals to construct nuclear power stations at Brokdorf and at Wyhl, Federal Republic of Germany, held; Swedish Miljöverbund formed.

**1977** Mass protests held against proposals to develop nuclear power installations at Grohnde, Kalkar, and Brokdorf in the Federal Republic of Germany and at Creys-Malville in France; *Soft Energy Paths: Towards a Durable Peace* by Amory Lovins published; Groupement pour la Protection de l'Environnement in Switzerland formed; Sea Shepherd Conservation Society founded; Green Belt Movement in Kenya emerges; chemical contamination discovered at Love Canal in Niagara Falls, New York; *Amoco Cadiz* causes oil spill off the French coast; Jane Goodall Institute for Wildlife Research founded.

**1978** United States bans the use of chlorofluorocarbons (CFCs) in nearly all aerosols; Grüne Partei Zürich in Switzerland formed; mass protests held against the nuclear power reprocessing plant at Gorleben, Federal Republic of Germany; Sahabat Alam Malaysia (Friends of the Earth in Malaysia) founded; Love Canal Homeowners Association formed.

**1979** In protests against government policies on nuclear energy, around 100,000 people assemble in Hanover and around 150,000 in Bonn, Federal Republic of Germany, and discussions are held in Offenbach over the possibility of establishing a new political organization; in Switzerland, first green parliamentarian to a national legislature elected; a green list (political party) in Bremen is successful in gaining the first seats ever won by a green party in a state parliament in Germany; green parties or lists participate in the first elections to the European Parliament; accident occurs at the Three Mile Island nuclear power plant in Harrisburg, Pennsylvania; Convention on Long-Range Transboundary Air Pollution (CLRTAP) is signed by 33 countries, including Britain, Germany, and the United States; in Luxembourg green groups form an umbrella organization, the Alternative Leescht: Wiert

Ich, to compete at elections; Citizens' Committee formed in the United States; approximately 75,000 people gather in Washington, DC, to take part in a demonstration against nuclear power; *Gaia: A New Look at Life on Earth* by James Lovelock published; campaign against the construction of the Franklin Dam in Tasmania begins; Convention on the Conservation of Migratory Species of Wild Animals signed in Bonn.

**1980** Die Grünen in the Federal Republic of Germany, Ecolo in Belgium, and the Citizens Party in the United States formed; approximately 80,000 people participate in an anti-nuclear protest rally at Trafalgar Square in London; Canada and the United States sign a Memorandum of Intent Concerning Transboundary Air Pollution; *The Global 2000 Report* to the president by the U.S. Council on Environmental Quality published; publication and widespread dissemination of the *World Conservation Strategy: Living Resource for Sustainable Development* occurs; Earth First!, a radical environmental group, started in the United States; India introduces Forest Conservation Act and Rules.

**1981** Brice Lalonde runs in the French presidential elections on a green platform; Swedish Green Party, Miljøpartiet de Grøna, and the Ecology Party of Ireland formed; India introduces Air Prevention and Control of Pollution Act.

**1982** In Belgium, Agalev detaches itself from Anders gaan leven and formally becomes a political party; Vereinte Grüne Österreichs formed in Austria; United Nations Convention of the Law of the Sea signed.

**1983** Die Grünen in Germany gains 28 seats in the federal parliament; Dei Greeg Alternativ in Luxembourg, De Grønne in Denmark, Comhaontas Glas in Ireland, and De Groenen in the Netherlands formed; following a resolution by the United Nations General Assembly, the World Commission on Environment and Development (WCED) is formed.

**1984** Inaugural meeting of the World Commission on Environment and Development held; poison gas accidentally released from the Union Carbide pesticide plant in Bhopal, India; congress of European green parties at Liege in Belgium advocates a "Europe of the regions"; Les Verts in France founded; green parties acquire 12 seats in the European Parliament and call themselves the Green-Alternative European Link; *Fighting for Hope* by Petra Kelly and *Seeing Green: The Politics of Ecology Explained* by Jonathan Porritt published; formation of the Thirty Percent Club to tackle long-range transboundary air pollution; Committees of Correspondence formed in the United States.

**1985** Scientists at the Villach Conference draw attention to the increase in the average temperature across the world over the past century (the greenhouse effect); Convention on the Protection of the Ozone Layer endorsed in Vienna; release of pesticides into the Rhine River following a fire in a Basel chemical storage facility destroys living things on a vast scale; Greenpeace member dies following the bombing by the French intelligence service of the *Rainbow Warrior* while it was moored at Auckland Harbor in New Zealand; Die Grünen in Germany becomes member of a coalition government with the Social Democratic Party in Hesse between 1985 and 1987; Rudolf Bahro quits Die Grünen over the issue of animal rights; the British Ecology Party becomes the Green Party.

**1986** A federation of green groups forms a national Swiss Green Party (Grüne Partei der Schweiz [GPS]), and in Italy green groups form a Federation of Green Lists, Federazione delle Liste Verdi; explosion occurs at the Chernobyl nuclear power plant near Kiev in the Soviet Union; India passes Environment Protection Act and accompanying rules.

**1987** Die Grünen gains 42 seats in elections to the federal parliament; in elections to the national parliament, green groups in Italy receive around one million votes (2.5 percent) and gain 13 seats in the lower house and 2 in the Senate; Agalev gains 7.3 percent of the vote and 6 seats in the lower house in Flanders; Montreal Protocol on Substances That Deplete the Ozone Layer signed; *Our Common Future* by the World Commission on Environment and Development published.

**1988** Miljöpartiet de Grøna becomes the first new party in 70 years to gain representation in the Swedish Parliament; Antoine Waechter runs in the French presidential elections on behalf of environmental groups; several candidates of the Green Party in Brazil gain seats in municipal elections in large cities; intellectuals, scientists, and artists form the Ruse Committee in Bulgaria; scientists and policy makers at the Toronto Conference call for a 20 percent reduction in carbon dioxide emissions by the year 2000; Brazilian environmental activist Chico Mendes murdered.

**1989** Victims of Bhopal awarded \$470 million in compensation; Brontosaurus in Czechoslovakia and, later, Green Party formed; *Exxon Valdez* oil tanker runs aground in Prince William Sound, Alaska; green independent candidates gain 17 percent of the vote in Tasmania, gain 5 out of 36 seats in the state parliament, and form an accord with a government led by the Australian Labor Party; green parties achieve their best-ever results in elections to the European Parliament, gaining 32 seats; the Green-Alternative European Link dissolved and the Green Group in the European Parliament formed; the Green Association is formed in Finland, though this subsequently divided into two separate strands, Vihreat (the Greens) and Vihrea Liitoo (the Green

Association); Independent Union Ekoglasnost in Bulgaria formed; Ecologists-Alternatives Party and the Federation of Ecological Organizations in Greece formed; *Blueprint for a Green Economy* by David Pearce and his collaborators published; Convention on International Trade in Endangered Species of Wild Fauna and Flora bans ivory trade.

**1990** Die Grünen fails to gain seats in the federal parliament, though a new group from East Germany, Bündnis 90, does gain eight seats; Groen Links (Green Left) in the Netherlands and the Green Party in Prague, Czechoslovakia, formed; Generation Ecologie under the leadership of Brice Lalonde formed as a competing party to Les Verts in France; signatories to the Montreal Protocol meet in London (London Conference of the Parties to the Montreal Protocol), and 80 countries now agree to phasing out, by the year 2000, chlorofluorocarbons (CFCs) and other chemicals that contribute to the depletion of the ozone layer.

**1991** Die Grünen becomes member of a coalition government with the Social Democratic Party (as senior partner) in Hesse; green groups in Italy win 16 seats in the lower house and 4 in the Senate; formation of the Green Party USA; Environmental Protocol to the Antarctic Treaty (the Madrid Protocol) signed by 39 nations agreeing to a moratorium on mining in Antarctica; severe pollution of the Gulf region in the wake of the Gulf War due largely to oil well fires and oil spillage.

**1992** United Nations Conference on Environment and Development (the Earth Summit) held in Rio de Janeiro leads to signing of the Framework Convention on Climate Change by 153 nations and by the European Union; most nations attending the conference also support the Convention on Biological Diversity, the Declaration on Environment and Development, and the enactment of Forest Principles; United Nations Commission on Sustainable Development formed; Basel Convention signed by 20 countries in order to prevent the illegal dumping or transportation of waste; 93 nations that signed the 1987 Montreal Protocol on Substances That Deplete the Ozone Layer agree to meet their targets by 1996 rather than 2000, the date set in the original agreement; Petra Kelly and Gerd Bastian are found dead in their home.

**1993** European Federation of Green Parties agrees on a set of guiding principles at a conference held in Masala, Finland; the Green Party in the United Kingdom fields 566 candidates in local elections, who gain, on average, 5.7 percent of the vote; membership of the Sierra Club numbers over 550,000; North American Agreement on Environmental Cooperation signed; agreement to safeguard the Black Sea by six European nations signed; World Bank permits public inspection of any authorizations linked to environmental assessment of intended projects; Latvian Green Party enters ruling coalition.

**1994** Die Grünen, in coalition with Bündnis 90, gains 7.3 percent of the vote and 49 seats in the federal parliament and displaces the Liberal Free Democrats as the third-largest party; in elections to the European Parliament the number of seats won by green parties drops to 22; Die Grüne Alternative in Austria secures 7 percent of the vote in national elections and 13 seats; Miljöpartiet obtains 5 percent of the vote and 18 seats in the Swedish Parliament; green candidates poll over a million votes in local elections in the United States; the Constitution of the Federal Republic of Germany is amended to include a specific commitment to environmental protection; United Nations Conference on Population and Development held in Cairo, Egypt; declaration by the International Whaling Commission of Antarctica as a permanent sanctuary for whales occurs.

**1995** In Sweden Miljöpartiet de Gröna gains four seats in elections to the European Parliament; Vihrea Liitoo secures 6.5 percent of the vote and nine seats in the Finnish Parliament; Agalev secures 4.4 percent of the vote in national elections; Die Grüne Alternative obtains 4.8 percent of the vote in Austrian national elections and 6.8 percent in elections to the European Parliament; Die Grünen becomes member of coalition governments with the Social Democratic Party in Hesse and in North Rhine Westphalia; first Conference of the Parties to the Framework Convention on Climate Change held in Berlin, Federal Republic of Germany; membership of the World Wildlife Fund (WWF) numbers well over five million; plan developed by the World Bank and international conservation groups to protect marine biological diversity in 155 Marine Protection Areas; over 100 countries ratify a United Nations Global Fishing Pact to curb the decrease in fish reserves; environmental activist Ken Saro-Wiwa and eight others are executed in Nigeria; a sodium leak at the Monju fast-breeder nuclear reactor in Japan leads to its temporary shutdown.

**1996** Australian Greens formed and Bob Brown elected to the Senate in federal elections; green independent candidates gain 11 percent of the vote and four seats in Tasmania; Vihrea Liitoo attracts 7.6 percent of the vote and gains a seat in the European Parliament; first presidential convention of the Association of State Green Parties in the United States held; second Conference of the Parties to the Framework Convention on Climate Change held in Geneva.

**1997** Les Verts in France gains seven seats in elections to the National Assembly; membership of the European Federation of Green Parties consists of 28 political organizations from 24 countries, and 7 other political associations make up a group of applicants to join the federation; third Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) held in Kyoto establishes the Kyoto Protocol, which sets

a target of a 5.2 percent reduction in the greenhouse gas emissions of industrialized states by 2012 relative to 1990 levels; Dominique Voynet of Les Verts becomes environment minister in France; Greenpeace, suffering from severe budgetary problems, is forced to make massive cuts to its staff; Ecologist Green Party of Mexico wins a Senate seat.

**1998** Bündnis 90/Die Grünen invited to join a coalition with the Social Democratic Party in Germany; India conducts a series of underground nuclear tests, the first by any country in 20 years; Estonian Greens lose their party registration; Federation of Green Parties of Africa formed; Rainbow and Greens Japan launched.

**1999** Oaxaca Declaration calls for formation of a Global Green Network of Green Parties; Green Party of the United Kingdom wins its first seat in the European Parliament; Green Party of South Africa formed; Verena Diener becomes first green president of a canton in Switzerland; Audie Bock elected as first green representative to the California State Assembly; fatal accident occurs at Tokaimura nuclear fuel reprocessing plant in Ibaraki, Japan; European Federation of Green Parties–European Free Alliance doubles its representation to 48 of 626 seats; Ecolo enters into a coalition government in Belgium; anti-globalization protests in Seattle that coincide with an International Monetary Fund and World Bank meeting turn violent; Indian National Green Party is registered.

**2000** Convention on the Protection of the Alps enters into force; anti-globalization protests held in Washington, DC, and Prague, Czech Republic; Asia Pacific Green Politics workshop held in Brisbane, Australia; David Brower, first full-time executive of the Sierra Club, dies; Cartagena Protocol of the Convention on Biological Diversity adopted; George W. Bush elected U.S. president; Ecologist Green Party of Mexico joins the conservative National Action Party in an alliance that brings Vicente Fox into the presidency.

**2001** Ecologist Green Party of Mexico leaves the alliance with the National Action Party; George W. Bush pulls the United States out of the Kyoto Protocol, eliciting harsh criticisms in Europe and Japan; the European Union (EU) establishes a Renewable Energy Directive that calls for the share of renewable energies in electricity production to increase to 21 percent in order to reach an overall target of renewable energies accounting for 12 percent of energy consumption by 2010; Cyprus Green Party gains first national member of parliament (MP); Global Greens founded; Green Party of the United States established; 11 September attacks on the World Trade Center and the Pentagon shock the world; U.S.-led war against the Taliban initiated in Afghanistan.

**2002** Latvian Green Party enters ruling coalition; Brazil establishes Tumucumaque National Park, the world's largest tropical forest park; Green Party of Pakistan founded; John Eder elected to Maine State House of Representatives in the United States; World Summit on Sustainable Development held in Johannesburg, South Africa, where world leaders confirm their commitment to implementation of Agenda 21 and the realization of the Millennium Development Goals; first Association of Southeast Asian Nations (ASEAN) +3 (China, Japan, Republic of Korea) environment ministers meeting held; the Bush administration announces its Clear Sky Initiative to cut sulfur dioxide, nitrogen oxide, and mercury emissions, but the plan does not include carbon dioxide; in France, Noel Mamere wins 5.2 percent of the presidential vote.

**2003** Mayors for Peace campaign launched; Benin Green Party enters national parliament; Wangari Maathai founds Mazingira Green Party of Kenya; Green Party of Nigeria formed; Global Greens founded; war on terrorism used to justify U.S. bombing of Bagdad; Saddam Hussein captured.

**2004** Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia join the European Union (EU); Green Party of Bangladesh launched; Convention on Persistent Organic Pollutants enters into force; European Green Party formed out of the European Federation of Green Parties; Germany sends 13 delegates to the European Parliament; Korea Greens founded; Indulis Emsis, founder of the Latvian Green Party, becomes the first green prime minister in the world; Wangari Maathai wins the Nobel Peace Prize for her efforts to promote sustainable development; Poland's Green Party (Zieloni) set up; Spanish Greens join the Green group in the European Parliament for the first time; Orange Revolution in the Ukraine.

**2005** Hurricane Katrina destroys much of New Orleans, raising many environmental-justice concerns; Red-Green coalition in Germany comes to an end; Asia Pacific Green Network launched; Asia Pacific Partnership on Clean Development and Climate started by the United States and joined by Australia, China, India, Japan, and South Korea; the European Union (EU) initiates its carbon emissions trading program; Ginette Skandrani evicted from Les Verts in France as a Holocaust denier; Kyoto Protocol enters into force; Women's Global Green Action Network established.

**2006** Czech Greens win six seats in the national parliament; European Green Party publishes plan for Green Future for Europe; Italian Greens enter Romano Prodi's ruling coalition; in midterm elections, the Democrats take back the majority in U.S. Congress, promising to initiate a more environmentally



proactive legislative agenda; Die Grünen becomes Austria's third-largest party; Chinese State Environmental Protection Administration announces that China has 2,700 registered environmental groups.

**2007** Bulgaria and Romania join the European Union (EU); the Intergovernmental Panel on Climate Change (IPCC) releases its fourth assessment report on the state of knowledge regarding climate change and its damaging consequences; Al Gore's *An Inconvenient Truth* awarded best documentary film at the Oscars; Al Gore and the IPCC earn the Nobel Peace Prize for their efforts to mitigate climate change; Australian Greens gain five senators; AVAAZ is launched; the WWF starts Earth Hour in Sydney, Australia; Global Young Greens, African Young Greens Federation founded; the Declaration of Sarekat Hijau Indonesia (Indonesian Green Union) adopted in the Congress of Indonesia People (Kongres Rakyat Indonesia); Documentation Centre on Environmental Conflicts founded in Italy; Mazingira Green Party of Kenya gains one seat in the Parliament; the Greens in Switzerland win 9.6 percent of the vote, 20 seats in the National Council and 2 seats in the Council of States; Estonian Greens pull in 7.2 percent in the parliamentary election and return six Greens to the Riigikogu; Uruguay starts the Uruguay Wind Energy Program; Ecuador initiates the Yasuni-ITT project.

**2008** 350.ORG founded; in Bulgaria, a new green party called the Greens (Zelenite) formed; the European Green Party expels the Danish green party, De Grønne, and takes in the Socialistisk Folkeparti (Socialist People's Party); financial crisis peaks globally; the Green Movement Party formed in Israel; the Greens, Italian Communists (Comunisti italiani) Party, and Communist Refoundation (Rifondazione Comunista) Party form the Rainbow Left; Japan Greens launches Green Future; the first commitment period of the Kyoto Protocol starts; Yeşiller Partisi, a new green party in Turkey, established.

**2009** The states gathered at the UNFCCC COP15 in Copenhagen agree to the necessity of limiting global temperature increases to no more than 2 degrees Celsius above 1990 levels by 2100; the State Agency on Alternative and Renewable Energy Sources set up in Azerbaijan; Elinor Ostrom wins the Nobel Prize in Economics in recognition of her research on common-pool resource management; "A Safe Operating Space for Humanity" report on planetary boundaries published; Sustainable Transition Research Network established.

**2010** African Greens Federation launched; the Australian Greens earn at least one seat in every state; the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization adopted; the Deepwater Horizon oil rig operated by BP explodes and sinks in the Gulf of Mexico, recorded as the largest oil spill accident in history; Costa

Rica aims to become a carbon-neutral country by 2021; in the UK, Caroline Lucas elected as the first Green Party member of parliament; the Green Party candidate Marina Silva received 19.4 percent in the Brazilian presidential election 2010, taking third place.

**2011** Hydrogen explosion and nuclear meltdown at the Fukushima Daiichi Nuclear Power Plant in Japan after a major earthquake and tsunami; anti-nuclear movement protests in the wake of the Fukushima disaster; in the state election of Baden-Württemberg, Germany, the Green Party polls at a record 24.2 percent which leads to the green-red government and the first green prime minister at the state level; Germany declares nuclear energy phase-out by 2022; in Canada, the Green Party leader Elizabeth May elected as the first member of parliament from the party; China launches seven experimental emissions trading markets; the majority of Italians vote for stopping nuclear energy in a referendum; EQUO, a new green party, founded in Spain.

**2012** The United Nations Conference on Sustainable Development creates the High-Level Political Forum; divesture movement initiated by 350.org; United Nations Conference on Sustainable Development, also known as Rio+20, held 20 years after the 1992 Earth Summit in Rio de Janeiro, Brazil; Greens Japan formed; Green Party Korea formed in 2012 as the first green party in the Republic of Korea; Green Party in Georgia wins one seat in the parliamentary elections; Canada withdraws from the Kyoto Protocol; Collaborative Partnership on Forests (CPF) launches Wangari Maathai Award.

**2013** IPCC Fifth Assessment Report, Climate Change 2013: The Physical Science Basis, released; East Africa Green Federation formed; the GLOBE Climate Legislation Initiative launched for advancing national legislation related to climate change; in the UK, Baroness Jones of Moulsecoomb becomes the first life peer in the House of Lords from the Green Party; Green Italy established; Dei Greng in Luxembourg wins six seats pulling in 10.1 percent of the vote and joins a coalition government of three parties; Pakistan launches its National Climate Change Policy; Minamata Convention on Mercury adopted.

**2014** The EU 2030 Framework for climate and energy sets targets for achieving a 27 percent share of renewable energy consumption, 27 percent energy savings, and a 40 percent cut in greenhouse gas emissions compared to 1990 levels by 2030; the Central African Greens Federation established; the world's two largest carbon emitters, China and the United States, make a bilateral pledge to take action on climate change; in the European Parliament elections, the Greens-European Free Alliance wins 50 seats and becomes the sixth-largest bloc; Ecuador signs permits for oil drilling in the Yasuni National Park.

**2015** The 21st Conference of the Parties to the UNFCCC adopted the Paris Agreement, which provides a pathway forward to limit temperature rise to below 2 degrees Celsius by achieving carbon neutrality in the second half of this century; most of the world's countries submit to the UNFCCC Intended Nationally Determined Contributions (INDCs), outlining their national climate adaptation and mitigation plans; the G7 leaders agree to phase out fossil fuels by the end of the century and transform electricity generation by 2050; ecological civilization concept included in China's 13th Five Year Plan; *Under the Dome* by Chai Jing, a documentary on air pollution in China, released; the UK approves fracking in Lancashire area; in Greece, Yannis Tsironis from the Oikologoi elected as MP and appointed minister of environment and energy; Vihrea Liitoo (the Green League) in Finland gains 15 seats in the national election, pulling in 8.53 percent of the vote; Pope Francis calls on the world's 1.2 billion Catholics to join the fight against climate change; the Sustainable Development Goals (SDGs) are adopted by the United Nations Assembly; explosion occurs in a warehouse in Tianjin Dongjiang Port due to chemicals and results in 165 deaths and more than 700 injured; Volkswagen emissions scandal breaks.

**2016** Bangladeshis march 155 miles against the construction of the Rampal and Orion coal-fired power plants that are to be built near the Sundarbans forest, a United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage site; Grace O'Sullivan from the Green Party in Ireland elected to the Irish Senate, Seanad; the Cyprus Green Party earns 4.81 percent in the parliamentary election and takes two seats; Taiwan announces a plan to phase out nuclear power by 2025; Montreal Protocol on Substances That Deplete the Ozone Layer amended with plan for a phase-out of hydrofluorocarbons, potent greenhouse gases.

**2017** In cities in Finland, the Netherlands, and Spain, pilot basic-income schemes start; across the United States and globally, the Women's March took place after Donald Trump's inauguration; globally, the March for Science organized on Earth Day took place, with hundreds of thousands participating around the world; Donald Trump announces that the United States will withdraw from the Paris Agreement; International Campaign to Abolish Nuclear Weapons wins the Nobel Peace Prize; China begins work on its first national park: Sanjiangyuan National Park (to open in 2020); Minamata Convention comes into force; G7 leaders agree to work on green financing; UN launches Clean Seas plan to tackle pollution in the oceans; divestment movements gain momentum as the Norwegian Sovereign Wealth Fund begins to sell off its shares in fossil fuel companies; Hurricane Maria flattens Puerto Rico; Ethiopia moves to eliminate the world's largest officially reported stockpile of DDT.

**2018** Outgoing California governor Gerry Brown organizes a climate summit in San Francisco and signs SB 100, a law calling for 60 percent renewable energy by 2030 and 100 percent carbon-free energy by 2045; massive forest fires burn huge areas in British Columbia and California; Hurricanes Florence and Michael wreak havoc in the United States; 17 million people join World Clean-Up Day; the Green Party in Bavaria wins the second largest share of votes (17.6 percent) in the October Land elections and the largest share of the vote of all parties in the Munich municipal elections (31 percent); the “rule book” for the Paris Agreement was agreed upon at the 24th Conference of the Parties to the UNFCCC held in Katowice, Poland; European Union votes to ban single-use plastic by 2021; Japan announces it will quit the International Whaling Commission and will resume commercial whaling in its territorial waters but will stop whaling in the seas of Antarctica; Brazilians elect populist Jair Bolsonaro as president, despite (or because of) his campaign pledge to open the Amazon to development and to reconsider Brazil’s engagement in the Paris Agreement; Extinction Rebellion founded in the UK to protest lack of action on climate change; Greta Thunberg launches Fridays for Future in Sweden.

**2019** Wikileaks founder Julian Assange taken from Ecuadorian embassy in London and arrested; after Swedish elections, Isabelle Lövin (Miljöpartiet de Gröna) becomes deputy prime minister; UK parliament declares climate change emergency; the city of Konstanz, Germany, declares climate crisis; tropical cyclone Fani hits India requiring the evacuation of one million people; Fridays for Future and Extinction Rebellion hold rallies in countries around the world demanding climate action; in elections for the European Parliament, the Group of the Greens/European Free Alliance gain 9.85 percent of the vote, amounting to 74 of the 751 seats; with growing scientific concern that climate change is progressing faster than previously predicted, COP25 in Santiago, Chile, takes on new urgency; deforestation of the Amazon quickens pace as environmental restrictions are loosened by Brazilian president Jair Bolsonaro.

# Introduction

## *The Emergence and Development of Green Political Thought, Movements, and Parties*

Human beings have been concerned about nature and their place in it for millennia. The endurance of ancient societies has been based partly on their success in living in alignment with nature. Although the relationship between aboriginal inhabitants of different regions and the natural environment has sometimes erroneously been portrayed as entirely harmonious, this romantic view is not without foundation. For instance, in Australia there was a vast difference between Aboriginals and Europeans in the 19th century in terms of their impact on the environment and of the technologies they used to exploit it. This has led some political activists to argue that Aboriginals waged “the longest and most successful conservation campaign” in history because they chose “to become part of the environment” rather than to destroy it in the name of progress (Burnam Burnam 1987).

The primary focus of this historical dictionary is on green campaigns and movements, which are closely linked to environmental movements, policies, and issues. While some attention is given to the movements of the 19th century (in the wake of the so-called great transformation that involved political upheavals as well as the rapid development of industrial capitalism and a free market economy), the primary focus is on the period since World War II that has seen both the further expansion of Western democratic free market economies and the questioning by some of the assumptions that underpin them. Here the term *green movement* refers to organized attempts by modern associations to change attitudes, values, and perceptions about the relationship between human beings and nature. Although disquiet about the consequences of human action on the natural environment can be traced back to the ancient Greeks and Romans (McCormick 1995), the emergence of interest groups, political parties, and mass social movements focusing primarily on environmental issues is a fairly recent phenomenon.

The origins of the green movement can be traced back to the 19th century. In this period, individuals, groups, and organizations began campaigning for the conservation and preservation of natural areas and the protection of wild-life species. Efforts to combat pollution also began. Among the most prominent groups concerned about environmental protection to emerge at this time were the Commons, Open Spaces, and Footpaths Preservation Society

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founded in 1865 in Britain and the Sierra Club established in 1892 in the United States. These groups achieved notable successes, especially in influencing legislation for environmental protection, including the dedication of major national parks. Over the next several decades, many new conservation and preservation groups were formed.

It was not until the 1960s, however, that the green movement in its more modern incarnation emerged. The green movements that arose at this time maintained the concerns with conservation, preservation, and industrial pollution held by earlier generations, but added to their agenda new issues, including justice, equality, participatory democracy, and sustainability. They also were more aware of and concerned with the larger structural factors that are behind pollution and resource degradation.

There were close connections between the New Left of the 1960s (the student movements, the anti-Vietnam War protests, and civil rights movements) and the green movements that arose to address environmental degradation and react against nuclear energy. Many participants in the radical movements of the 1960s became involved in environmentalist groups in the 1970s. There has likewise been a degree of thematic continuity. An important stimulus to protest action was provided by campaigns conducted in the 1950s by associations like the Campaign for Nuclear Disarmament. This postwar movement against testing nuclear weapons anticipated social movements like the ones that protested the war in Vietnam and, from the 1970s, fought against the deployment of nuclear weapons. The latter contributed to a revival of the Campaign for Nuclear Disarmament in the 1970s, and it was no coincidence that the organization became affiliated with interest groups such as Friends of the Earth and Greenpeace and political associations like the Ecology Party. The question of nuclear power not only united the green movement, but it also provided a vital spur to the formation of green political organizations. Following the 1973 decision of the Organization of Petroleum Exporting Countries (OPEC) to increase the price of oil sharply, Western countries sought to substitute nuclear power for imported oil. This provoked strong opposition, and several powerful anti-nuclear social movements and political parties emerged.

One of the major differences between the period since World War II and earlier experiences is the level of public support for environmental protection, which has grown substantially. Citizens' initiatives; regional, national, and international social movements; new political organizations; and more traditional political parties have promoted environmental protection, albeit at different times, and to different degrees. Many traditional parties have assumed a large portion of the agenda first promoted by the green movement. The eagerness of traditional political organizations to adopt many of the policies of the green movement is matched by a broadening of the social bases of support for environmental protection. Over the past several decades,

support for the green movement has been notable among certain social groups, including the young, the relatively affluent, and the well educated. Lately, however, the social bases of the green movement have increasingly come to reflect those of the broader community.

In referring to the green movement, there is an implicit assumption of similarities not only in the social bases for support of certain forms of political action and political agenda but also of equivalence in sources of inspiration for such action and of similar preoccupations. While this can be shown to be the case, it is also important to point out that there is great diversity in approaches to addressing environmental problems and in how people perceive the relationship between human beings and nature.

There is a further issue. The agenda of green political groups and organizations includes much that is not specifically green, even though these preoccupations or values can be accommodated by what Goodin (1992) refers to as a “green theory” or philosophy of value. Among these values are the focus on postmaterialism (see Inglehart 1990), the notion of nature as irreplaceable, the ideas of sustainability and sustainable development, the long-term consequences of our current actions, and the connection between environmental protection and ideas of the emancipation of oppressed groups (for instance, minorities, the poor, and women). Goodin describes these values as corollaries to a green theory of value. More problematic, in his view, is the association between various personal lifestyles, especially those that focus on a holistic approach (be it to medicine, diet, or religion), and the green agenda for changes in policies. At any rate, the following account will be framed by three sets of considerations: the philosophies underpinning the diversity of values that influence the actions of participants in the green movement; the political organizations, including social movements, political parties, and interest groups that attempt to articulate the concerns of the green movement; and the issues raised by the green movement.

## FUNDAMENTAL PRINCIPLES AND CONCEPTS

One of the distinctions frequently used to characterize different approaches within the green movement is that between “deep” and “shallow” ecologists. The Norwegian philosopher Arne Naess invented the term *deep ecology* in 1972. Shallow ecologists are said to be interested primarily in preserving resources for the benefit of human beings in developed nations. By contrast, deep ecologists concentrate on the intrinsic value of the environment, hence on a non-anthropocentric focus, valuing nature for its own sake and resisting the notion that human beings can be understood as separate from their environment. Like the biocentrists, deep ecologists advocate unity with nature

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and the preservation of all forms of life. Among the most significant divisions within the green movement is the one between the proponents of an anthropocentric perspective and those who urge others to accept the intrinsic value of nature.

This conflict manifests itself, for instance, in the discussion of the rights of animals. Deep ecologists have argued that animals have moral rights. Hence, supporters of various environmental groups began to concentrate as much on the defense of the Earth and of all species of plant and animal life as on protecting individual human lives. The defense of the moral rights of animals is made in *The Case for Animal Rights* by Tom Regan. Still, some of these efforts to argue for the basic moral rights of animals are often too intricate for most supporters of the green movement.

Other arguments are easier to follow. The idea of a loss of community is linked by many in the green movement to the rise of industrial society and the sense of alienation this has given to many people. This is a popular theme in writings by prominent intellectuals in the green movement. In *Socialism and Survival*, the late Rudolf Bahro argued that the interest of the human species should become the core point of reference for understanding the problems we confront, and that social change could only be achieved if one went beyond the concept of class enunciated by Karl Marx. There is a parallel here with the arguments of deep ecologists, who questioned an anthropocentric approach to nature.

In order to reverse the loss of community, leading figures in the green movement such as Bahro advocated a more spiritual approach and the development of communal lifestyles. Bahro was also willing to propose a fairly controversial means of embracing such a lifestyle: he championed a model based on the practices of the Benedictine Order of monks. Kirkpatrick Sale, who introduced the concept of a decentralized bioregional society, articulated another vision for a green society, not too dissimilar to that espoused by Bahro. The idea is that people will live in accord with the rhythms of the land or the discrete territory defined by natural boundaries. The focus is not on reshaping nature but on adapting to it. The planned outcome would be a more balanced economic and social system that would enable people to enjoy more leisure, develop communal bonds, and live in proximity to nature.

Many of these ideas had been anticipated by earlier generations. For instance, in *A Sand County Almanac*, published in 1949, Aldo Leopold developed an ethic for the relationship between human beings and their environment that went beyond the predominant focus on economic relationships and posited the extension of the notion of community to include the soil, water, plants, and animals. Moreover, like Rachel Carson in *Silent Spring*, he presented a gloomy portrait of the damage being inflicted on the environment.



The notion of reversing trends toward industrialization and development has also been an important theme in the pronouncements by leading figures in the green movement. In *The Great U-Turn: De-Industrializing Society*, Edward Goldsmith argues against the construction of cities, factories, highways, and airports. In certain ways, this represents a radical response to the claims about *The Limits to Growth*. A similar line of argument is pursued by writers who maintain that affluent lifestyles are unsustainable and that we need to redistribute resources from wealthy to poor countries and reverse trends away from consumption-oriented economic development.

The connection between ideas about biocentrism and the rise of social movements arises in various ways. Take the interest in ecology among some supporters of the feminist movement; this group has been often referred to as the “ecofeminist wing of the green movement.” Ecofeminists have suggested that women may be more inclined to support the aims of the green movement because they are inherently closer to nature than men. This has then been linked to arguments about patriarchy and the propensity of men to destroy the natural environment.

The focus by ecofeminists on the nonmaterial characteristics of the relationship between human beings and nature reflects an enduring interest among the progenitors of the green movement. Pioneers like John Muir in the United States and Myles Dunphy in Australia anticipated the contemporary interest in the spiritual qualities of nature. This theme is echoed in postmaterial values as well as in deep ecology. Some writers have condemned industrial society on the grounds that it fragments life. They draw a sharp contrast between industrialization and a holistic approach that includes spirituality, particularly the aesthetic, caring, and loving aspects of existence. Still, the notion of spirituality does not feature in an explicit manner in the pronouncements of green political organizations and is often regarded with suspicion by them.

While the terms *deep ecology* and *shallow ecology* have been used to differentiate between the approaches of green thinkers, activists, and sympathizers, the terms *fundamentalist* and *realist* have been utilized largely to refer to different factions within green political organizations. The terms were first used to describe groups that emerged in Die Grünen in Germany. The fundamentalists in the party were generally opposed to cooperation with traditional political parties, particularly to any notion of forming coalitions with them. The fundamentalists believed that they had a better understanding of the social movements that had given rise to the formation of green political parties than the realists. Whereas the realists appeared to accept that parliamentary politics involved compromise, the loss of the spontaneous character of the green movement, and an emphasis on professionalism, the fundamentalists argued for grassroots participation in the party, including the possibility of recall of delegates, rotating them out of office and achieving

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agreement through consensus rather than through majoritarian voting. In most green parties, the outcome of protracted struggles for power between fundamentalists and realists has been a victory for the latter. At any rate, most supporters of green parties have been in favor of cooperation between green and traditional political parties in order to accomplish at least some of the goals of the green movement. This trend has manifested itself in the increasingly large number of cases where green parties have entered into coalition governments. Bündnis 90/Die Grünen joined the ruling coalition in Germany from 1998 to 2005. Greens have been parts of governing coalitions in many countries, including Belgium, the Czech Republic, Finland, France, Germany, Georgia, Italy, Latvia, Luxemburg, New Zealand, and Sweden.

Though bruised in the electoral arena, the fundamentalists, like the deep ecologists, reflect the vigor of the green movement. This vigor is maintained by the infusion of new ways of thinking. Some ideas, like the Gaia hypothesis that was posited by James Lovelock in the 1970s, continue to provide inspiration to the green movement in questioning enduring ways of perceiving the environment. Though Lovelock has recognized that his belief in the existence of a complex system that can act as a “single living entity” (Mother Earth) cannot be tested scientifically, his argument continues to attract both supporters and detractors of the green movement, particularly since it implies that nature, if not the human species, has the capacity to survive the attack on it by human beings.

The tension between realism and fundamentalism also reflects persistent themes in socialist, or left-wing, politics. There has often been a close connection between the development of the green movement and left-wing politics. An important parallel has been the notion of social ecology. Whereas deep ecology is concerned about the exploitation of the environment, social ecology, as understood by anarchist-writer Murray Bookchin, represents the view that efforts to dominate nature originate in people’s attempt to dominate their fellow human beings. The hope by Bookchin is that the green movement will seek to develop new social structures based on direct democracy rather than on the power of centralized and hierarchical bureaucracies. There is some overlap between these ideas and those of fundamentalists in green parties.

The creation and further development of green political parties reflected these deep tensions between the realists and the fundamentalists. However, there were also strong unifying elements, and it is remarkable how much green parties shared, in terms of a common philosophical agenda across nations and continents, even though circumstances varied from country to country.

## CONCEPTUAL BASES FOR THE GREEN MOVEMENT

One way of accounting for or understanding the ways of thinking that predominate in the green movement is to consider the views of influential writers. The success of social movements has always depended on the capacity of intellectuals, scientists, and writers to develop new concepts that might change perceptions and then influence behavior. Among the most dramatic and successful efforts to bring about a transformation of that kind was the publication in 1962 of *Silent Spring* by Rachel Carson. This work became a source of inspiration to millions of people. The term *silent spring* was used to characterize the devastating consequences of the continued use of chemical insecticides and pesticides like dichlorodiphenyltrichloroethane (DDT) on wildlife and its habitat. The book provoked strong opposition from the chemical industry, which tried unsuccessfully to have it banned. The extraordinary popularity of the work contributed to the establishment by President Kennedy of a special panel of the Science Advisory Committee that supported the arguments presented by Carson about the hazards of pesticides.

Another issue that raised green awareness was the question of the “limits to economic growth.” The publication in 1972 of *The Limits to Growth*, a study commissioned by the Club of Rome, focused the attention of millions of people on the problems arising from economic growth, industrialization, environmental degradation, population change, and the depletion of natural resources. The study made use of computers and complex models to predict the pattern of economic change over the next century.

The Club of Rome was started by Aurelio Peccei. Peccei was an Italian entrepreneur who brought together industrialists, scientists, economists, politicians, and bureaucrats to debate the connection between environmental and economic issues and the political and social implications of changes in these areas. The Club of Rome, like the Business Council for Sustainable Development, formed in 1990, has exercised significant influence in the area of environmental and industrial policies.

The appeal of *The Limits to Growth* was also emotional and served as a point of reference for people who, since the 1960s, had either participated in or been sympathetic to the aims of environmental groups and social movements that arose on university campuses, especially against the war in Vietnam. Environmentalist opponents of the prevailing industrial system were interested in the study’s prediction that, if the prevailing patterns of exponential economic growth were to continue, there would be a catastrophe by the end of the 20th century arising from the rapid depletion of resources, pollution of the environment, shortages in food supply, and growth in world population. Although critics of the study pointed to its failure to take into

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account the possibilities of devising strategies to address these threats, the book became one of the most successful efforts to raise interest in and awareness of environmental problems.

A further highly influential treatise was *A Blueprint for Survival*, published in 1972 by the editorial board of *The Ecologist* magazine. Like *The Limits to Growth*, *A Blueprint for Survival* advocated radical changes. Whereas *The Limits to Growth* urged governments to initiate drastic policies to reduce industrial and agricultural investment, reduce the birthrate, and transfer wealth from more developed to less developed countries, *A Blueprint for Survival* focused on radical changes in lifestyles in order to ensure the perpetuation of the planet. In particular, it advocated the formation of decentralized social structures as a way to ensure greater participation in decision making and encourage innovation. Anticipating the aims of the green political movements over the coming decade, the book argued for small, self-regulating communities in which people might achieve more fulfilling personal relationships. It also advocated greater controls on population growth. An important distinction between the two books was the focus in *The Limits to Growth* on the role of elites in bringing about change and on scientific models for understanding the problems arising from economic growth, industrialization, and environmental degradation.

The Reverend Thomas Malthus in *An Essay on the Principle of Population* anticipated concerns about population growth in the late 18th century. They were echoed in the late 1960s in a book that received immense publicity, *The Population Bomb* by Paul Ehrlich. In his essay titled “The Tragedy of the Commons,” Garrett Hardin initiated a debate on whether democratic systems could deal with the pressures of burgeoning populations on the commons. In the absence of controls, he argued, the tendency would be to exploit the commons (the atmosphere, fish in the oceans, groundwater) to the point of irreparable harm. According to Hardin’s logic, the principle of freedom in the use of common land had become anachronistic. Critics of Hardin, among them the Nobel Prize laureate Elinor Ostrom, have pointed to cooperative, self-regulating institutional forms developed particularly at the local level to protect the commons. In his book *Climate Crisis and the Democratic Prospect: Participatory Governance in Sustainable Communities*, Frank Fischer acknowledges that democratic systems may find it hard to respond to environmental crises, but suggests that global eco-localism can help preserve a measure of democratic governance.

The notion of “small is beautiful,” derived from the title and arguments of a book written by E. F. Schumacher, has had an enduring impact on the green movement. Schumacher developed an influential argument that questioned the appropriateness of large-scale ventures. This coincided with the interest among many activists in the green movement in forming decentralized and small-scale organizations that might facilitate participation and democratic

decision making. Schumacher was also concerned about the impact of large-scale developments on the environment, again a very popular theme among supporters of the green movement.

The challenge issued by Schumacher impinged on prevailing ways of thinking about the economy. The questioning by the green movement of the dominant approaches to conceptualizing the economy has led to a number of reforms and calls for deeper reforms. Some have called for changes that stay largely within the dominant neoliberal economic paradigm, for example through the introduction of carbon taxes and emission trading systems with a view to reducing emissions that add to the warming of the Earth's atmosphere. Others have called for more radical change. Nicholas Georgescu-Roegen and later Jacques Grinevald and Serge Latouche helped launch the degrowth movement, which calls for the downscaling of production and consumption.

While not all green activists see degrowth as realistic, many supporters of the green movement have questioned the values that underpin the focus on consumption-oriented economic growth and material prosperity. In *The Green Consumer Guide*, John Elkington and Julia Hailes argued for the possibility of combining a comfortable lifestyle with environmental protection by buying products that do not destroy the environment. Thomas Princen, Michael Maniates, and Ken Conca in their book *Confronting Consumption* and Kozo Yamamura in his book *Too Much Stuff: Capitalism in Crisis* argue that it is the consumerism of the industrialized north and the structures that support it that are a major factor behind the ecological destruction in many parts of the world. Naomi Klein, in her 2014 book *This Changes Everything: Capitalism vs. Climate*, called for a major rethinking of capitalist systems and the political structures that depend on them if we are to tackle the problem of climate change. This she portrays not only as a challenge but also as a potential for social, political, and economic renewal.

The green movement has challenged how we define economic benefits, and several efforts have been undertaken to revisit how we measure economic performance. Traditionally the focus has been on the gross national product. However, in the wake of the destruction wrought by industrial society, economists sympathetic to the green movement have attempted to devise new standards for measuring the performance of a nation, particularly in terms of the health of the population and other aspects of the quality of life. These efforts have the potential to enable citizens to influence government action and behavior since they question the basic premises of many policy decisions. One such initiative to bring about change in perceptions and policies was the publication by David Pearce and his associates of *Blueprint for a Green Economy*. This book mapped out measures for achieving sustainable

development by placing values on the environment, including water and the atmosphere, that have had no price attached to them and have therefore been overexploited.

Rather than focus on the substitution of products, some green economists such as Herman Daly have promoted the notion of a “steady-state” economy. Daly’s argument is based on the laws of thermodynamics; in a closed system, energy is neither produced nor consumed but only modified. Daly argues that in our society the rate of modification of existing matter is greater than the rate of replacement by solar energy. In order to address this problem, he advocated the creation of a steady-state economy with defined limits to the size of population and creation of wealth. Martin Jänicke and later Arthur Mol and Gert Spaargaren took a pragmatist approach with their promotion of the concept *ecological modernization*, the idea that through embracing energy and resource efficiency potentials, striving for the highest possible environmental standards, and developing renewable energy sources, economies could thrive while protecting the environment.

Green movements have sought to raise societal awareness of the impact of consumer lifestyles through, for example, the concept of the ecological footprint, first proposed by William Rees and elaborated upon by Mathis Wackernagel. Many green political parties have advocated the introduction of a guaranteed minimum income in lieu of the existing system of social security and tax relief. While this scheme may have certain merits, the green movement has so far been unable to deal adequately with two major objections to the idea—namely, the cost of implementing it and the disincentives it might create for people seeking employment.

There has also been a strong connection between green-movement ideas and concerns with social justice. Linkages were made early on between issues of racial justice and environmental pollution in the United States. Over time, the international dimensions of environmental justice began to receive more and more attention as well. *Intragenerational* environmental-justice concepts have been linked, for example, to the divide in consumption levels between the north and the south and the question of who carries the heaviest environmental burdens linked to this consumption. *Intergenerational* environmental-justice concerns raise moral and ethical issues about how consumption patterns and lifestyles today limit the options available to future generation.

These ideas have connections to the concept of sustainable development, which was popularized by *Our Common Future*, the 1987 report by the World Commission on Environment and Development. The report coincided with growing concern among Western nations about the dangers posed by environmental destruction and the enduring problems faced by less developed nations in meeting the basic needs of their populations. The term *sustainable development* was defined by the commission as meeting “the needs

of the present without compromising the ability of future generations to meet their own needs.” The commission attempted to show how a focus on economic growth would not necessarily damage the environment if it were guided by the principles of ecology. Governments, businesses, and environmental groups have used the idea of sustainable development to forge close links between economic and environmental concerns. Governments have used the notion of sustainable development to try and shape debates about the environment and thereby diminish the electoral influence of some green political organizations. Although there has been much criticism of the concept by the latter, many supporters of the green movement have become involved in efforts to implement sustainable development. They played a critical role in the formation of the Sustainable Development Goals, a set of 17 goals countries around the world have pledged to meet by 2030.

Discussions about sustainable development have stimulated efforts to place a value on the environment. Among others, economists have tried to achieve this through the introduction of pollution charges and carbon taxes and, as indicated earlier, through questioning conventional ways of measuring economic costs and benefits.

Another dimension of the economic strategies proposed by the green movement has been the idea of alternative energy as a framework for new policies. Green political organizations have drawn attention to the possibilities of using renewable energy sources such as solar, wind, and biofuels. An influential example of this way of thinking is *Soft Energy Paths: Towards a Durable Peace* by Amory Lovins. Lovins’s idea that the development of benign, or “soft,” technologies could contribute to the formation of a less coercive and centralized social system than the prevailing one was well received by many in the green movement. These technologies would apparently allow for the evolution of a more participatory political culture. Ernst Ulrich von Weizsäcker took these ideas and called for four- and fivefold efficiency improvements in society in order to reduce our human footprint and respond to global challenges like climate change.

Such concepts have stimulated ideas on how to deal with threats such as the inefficient use of resources like oil and other fossil fuels, traffic congestion, and the greenhouse effect. In an effort to make polluters pay for the damage they inflict on the environment, some governments have introduced carbon taxes and carbon trading systems with the aim of reducing emissions that pollute the atmosphere and contribute to global warming. Many governments have become willing to explore the possibilities of developing renewable energy. And increasingly, governments are realizing that they will have to make some hard choices if they are to cope with problems like climate change and biodiversity loss.

The embracing of new ideas has been critical to the continued development of green parties. The notion of the anthropocene popularized by Paul Crutzen in the 2000s has opened new lines of research and policy debates. Crutzen suggests we are now living in an age when human activities are having such deep impacts on the earth's geology and ecosystems that we are fundamentally changing the planet we live on. That there are now efforts to find geoengineering fixes to problems like climate change have also alarmed environmentalists.

Green groups are also reacting to the growing warnings of scientists that we may soon be hitting up against multiple tipping points. A group of Earth scientists led by Johann Rockstrom at the Stockholm Resilience Centre proposed the concept of "planetary boundaries" in 2009. They point to the dramatic impacts human activities are having on the environment and raise questions asking at what point human activities might do so much damage to natural systems that life on the planet itself could be threatened.

## **GROWING CONCERNS ABOUT A PLANET IN CRISIS**

There are many global environmental issues that have been championed by green movements. One of the first environmental issues to capture the attention of green movements and parties in Europe was acid rain. Acid rain is a form of pollution caused by emissions of sulfur dioxide and nitrogen oxide from industrial plants, coal-burning power stations, and cars. It can damage ecological systems and agricultural crops as well as corrode buildings and infrastructure. The Swedes were at the forefront of campaigns against acid rain and, already in the 1960s, were applying pressure for governmental action across national boundaries. Green movements in Europe picked up their calls for action, especially once awareness grew that the effects of acid rain were more widespread than originally realized. The 1979 Convention on Long-Range Transboundary Air Pollution (CLRTAP) and the 1984 Thirty Percent Club of nations, which committed themselves to reducing sulfur dioxide emissions by 30 percent over the period 1983 to 1993, were early initiatives to deal with acid rain. Initiatives of this kind were spurred on by the electoral success of green parties, particularly in countries like the Federal Republic of Germany. In 1990, the passage of the U.S. Clean Air Act amendments aimed at reducing sulfur dioxide and nitrogen oxide emissions through the introduction of an emissions trading system was pushed by the green movement. More recently, the acid rain problems stemming from coal burning in China are mobilizing green activists in East Asia.



Another major issue that captured the attention of the green movement and propelled green issues high onto the political agenda is the destruction of the ozone layer. Scientists warned that depletion of the ozone layer, which blocks harmful ultraviolet radiation from the sun from reaching the Earth, could lead to a steep rise in the incidence of skin cancer as well as damage the immune systems of all species. Pressure from scientists and the green movement helped convince traditional political parties of the necessity of phasing out the use of chlorofluorocarbons (CFCs) and other ozone-depleting gases. In 1987, countries that were producers and consumers of CFCs signed the Montreal Protocol on Substances That Deplete the Ozone Layer. The initial aim of the agreement was to curtail the use of CFCs by 50 percent by the year 2000, but subsequent scientific evidence of the seriousness of the problem led to a more rapid phase-out schedule and expansive coverage of harmful substances.

Green movements and parties have a long tradition of concern with international wildlife protection. The International Union for the Conservation of Nature and Natural Resources (IUCN) (formed by conservationists in 1948 and known, until 1956, as the International Union for the Protection of Nature). This organization has been instrumental in bringing about cooperation between governments and nongovernmental organizations (NGOs). In the 1970s it formulated the World Conservation Strategy and was active in developing the notion of sustainable development as well as in helping to convene the United Nations Conference on the Human Environment (UNCHE) in 1972. The IUCN also played a central role in the creation of the World Wildlife Fund (WWF) as well as in conservation initiatives in Africa. These initiatives included the African Convention on the Conservation of Nature and Natural Resources signed by 33 African states in 1968, as well as the African Special Project, which sought, with the assistance of African governments, to promote conservation and the economic, cultural, and scientific value of wildlife. A further significant step toward species protection was taken at the initiative of the IUCN with the formation of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), signed in 1973 by a small number of countries; in subsequent years it has attracted many more government endorsements. The limitations in the CITES regime aimed at stopping biodiversity loss have led to other initiatives, most notably, the Convention on Biological Diversity and its 2010 Aichi targets. These agreements aim to stem the loss of plant and animal species and prevent the collapse of ecosystems. One target is to have 17 percent of terrestrial inland and water areas and 10 percent of coastal and marine areas under protected status globally by 2020. As of 2016, 15 percent of global land area and 10 percent of territorial waters were designated as

national parks or other types of protected areas. While a step forward, many of the most important biodiversity zones are still not protected. Biodiversity loss thus remains a very important areas of green activism.

One of the most significant agencies coordinating the efforts of non-governmental, as well as governmental, organizations to address environmental issues is the United Nations. Among the initiatives of this agency are the United Nations Educational, Scientific, and Cultural Organization's (UNESCO) work toward bringing experts together in order to establish a sound basis for gathering information on the state of the environment. This agency had a pivotal part in convening the Intergovernmental Conference of Experts on the Scientific Basis for Rational Use and Conservation of the Biosphere in 1968. This initiative also served to pave the way for the 1972 UNCHE. Another UNESCO project was the 1971 Man and the Biosphere Programme, which brought together experts from many countries to acquire more information on the condition of the environment and on the impact of human interventions as well as to promote conservation efforts in inhabited areas.

The 1972 UNCHE represented an important milestone in uniting government and nongovernmental organizations, with official delegates from 113 countries. This gathering highlighted both important differences between and opportunities for cooperation among developed and less developed nations. Apart from passing resolutions on a wide range of issues including whaling and nuclear weapons testing, the conference created the United Nations Environment Programme (UNEP). The aim of this program is to develop further the cooperation that had been achieved between government and non-governmental organizations. It has focused on increasing knowledge about ecological systems, assisting in natural resource management, and providing expertise to less developed nations. UNEP has contributed to the design of international environmental treaties.

Among the factors that determined the issues taken up by UNCED in 1992 was the report *Our Common Future* produced by the World Commission on Environment and Development (1984–1987). This highly influential publication gave weight to the notion of sustainable development and to notions of equity and justice. In many ways, it was an embrace of many of the goals and ideas that arose from the green movement. In 2000, at the United Nations Millennium Summit, world leaders agreed to establish a program for combating hunger, disease, illiteracy, environmental degradation, and discrimination against women. The Millennium Development Goals (MDGs) were to be achieved by 2015. The 2015 “Millennium Development Report” found that good progress on meeting some goals had been achieved, such as reducing extreme poverty and hunger, achieving universal primary education, and gaining access to safe drinking water and sanitation services (part of environmental sustainability goals), but progress was neither uniform nor complete.

Gender inequality and poverty, and climate change and environmental degradation, undermine progress achieved in other areas. In 2015, the United Nations created the Sustainable Development Goals (SDGs), which go beyond the MDGs to include more environmental, economic, and equality targets. There are 17 broad goals broken down into 169 targets that should be accomplished by 2030. All UN members signed the SDGs.

Also critical have been the growing voices of the world's scientific community. The formation of the Inter-governmental Panel on Climate Change in 1990, which periodically assesses the state of the world's science on climate change, and the formation in 2010 of the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services have given scientists unprecedented voice in international environmental policy making.

The 1992 United Nations Conference on the Environment and Development held in Rio de Janeiro represented a mammoth effort to bring together organizations from all arenas to address some of the most pressing environmental issues. Despite the reservations expressed by many commentators about the capacity of such a gathering to bring about effective changes in policies, the conference drew considerable attention to questions of environmental protection and economic development. It also led to the signing of several agreements, including those on the implementation of sustainable development (Agenda 21), the Framework Convention on Climate Change (which outlined principles that would underlie efforts to deal with problems like global warming), the Convention on Biological Diversity, the Declaration on Environment and Development, and the enactment of Forest Principles.

Five years after the conference, in 1997, the Kyoto Protocol to the Framework Convention on Climate Change was signed. The Kyoto Protocol entered into force in 2005. Its first phase ended in 2012; a second phase with a smaller membership runs through 2020. Significantly, in December 2015, the 21st Conference of Parties (COP 21) to the UNFCCC met in Paris, France, to formulate a global agreement to tackle climate change. The Paris Agreement marks the culmination of years of work to forge an agreement that could be accepted by all states. Environmental groups played a critical role in the process, although they only had the status of observers in the negotiations. The Paris Agreement provides a pathway forward to limit the rise in global average temperatures to well below 2 degrees Celsius, and to strive to keep them at no more than 1.5 degrees Celsius. The legal nature of the agreement is mixed. It is binding in some respects such as reporting requirements, but leaves the setting of emissions targets voluntary. Individual countries report their own nationally determined contributions. In 2018 rules for its implementation were agreed upon in Katowice, Poland.

Beyond these issues, green organizations have championed organic farming as a means of reducing reliance on pesticides and environmentally harmful modern agribusiness practices. Along with this, they have typically opposed the introduction of genetically modified organisms (GMOs) into the food system for fear of their possible long-term health and ecological impacts. They have championed safe-food initiatives, especially in regions of the world where pesticide controls are weak.

## **GREEN PARTIES IN WESTERN EUROPE**

Traditional patterns of political behavior and institutional practices in different countries or regions in Europe have had a significant impact on the fate of their green political associations. The emergence of competent leaders who were able to innovate or seize on opportunities for change has been another important consideration. In some countries, certain individuals, expert communities, or intellectuals have played a crucial part in articulating concerns about the environment or the quality of life and in bringing together those who are disaffected with established political practices.

Green parties emerged almost simultaneously in several European countries, although for reasons colored by national characteristics. In Belgium, for instance, the emergence of a green movement can be traced back to, among other factors, a Christian movement initiated by Luc Versteyleen, a Jesuit priest and teacher. Among the key concerns of Versteyleen and his associates was the meaning of the education offered to young people and of the values connected with a competitive, consumer society. These deliberations led to the formation of the *Anders gaan leven* movement, first in Antwerp and later in the provinces. This movement experimented with alternative lifestyles, attempted to achieve grassroots democracy, and engaged in campaigns to protect the environment. It also provided the basis for a new political organization, *Agalev*. Like *Anders gaan leven*, *Agalev* had as one of its primary aims getting young people to think about their problems and position in society. After competing in local and regional elections, *Agalev* participated in elections to the European Parliament in 1979. In 1982 *Agalev* separated itself from *Anders gaan leven* and formally became a political party.

The development of green political organizations in Belgium also shows how prevailing institutional practices and traditions shape such groups. In this case, cultural, religious, and ethnic differences intersect with green politics. Whereas *Agalev* represents the Flemish community, the other Belgian Green Party, *Ecolo*, represents the Walloonian population.

France offers another illustration of the institutional factors that shape the development of green political parties. As in many other European countries, the origins of the green movement in France include a strong tradition of nature conservation groups, radical student groups that emerged in the 1960s, and citizen protests against the development of nuclear power. The French political system also presented both unique opportunities for and constraints on the development of green parties. In addition, several political leaders who had a decisive impact on the shape of these parties emerged. Although the green party *Les Verts* (The Greens) was formed in 1984, there were difficulties in uniting the green movement. There were clashes within the leadership, particularly over the questions of cooperating with traditional political organizations and of balancing two sets of considerations: the retention of many of the ideals of grassroots movements and the need to engage in pragmatic politics. In 1990, a second green party, *Generation Ecologie*, was formed under the leadership of Brice Lalonde. In 1993 the parties presented a united front at the presidential elections. Although they did well, winning 7.6 percent of the vote, they were not able to win any seats in the National Assembly. With the 1997 election however, they succeeded in sending eight delegates to the National Assembly and in placing Dominique Voynet in the position of environment minister. In 1994, a third environmental party, *Independent Ecological Movement* (*Mouvement Écologiste Indépendant*) was founded by Antoine Waechter, former presidential candidate of The Greens, and in 1996, a fourth green party, *Citizenship, Action, Participation for the 21st Century* (*Citoyenneté Action Participation pour le 21ème siècle*) was formed by Corinne Lepage as a political reflection club. Divisions among The Greens have weakened their chances of representation nationally. To address this, in 2010 The Greens and *Europe Ecology* merged to form *Europe Ecology–The Greens* (*Europe Écologie Les Verts*). The new party did well in municipal elections, winning 8.2 percent of the vote in the 2011 cantonal elections. Eva Joly, the party's candidate in the 2012 presidential election, received 2.3 percent of the vote in the first round of voting, and subsequently endorsed Socialist Party candidate François Hollande for the second round.

It has not been unusual for more than one green party to emerge in a country. In Belgium, this reflected religious and ethnic divisions. In other countries, divisions occurred along the lines of political ideology. Two green parties formed in the Netherlands. The first, *De Groenen* (The Greens), was founded in 1983 and has not been very successful in electoral terms. The second, *GroenLinks* (Green Left), represented an electoral alliance of left-wing parties in 1989, before turning itself into a new political party in November 1990. One of the main differences between the two parties has been the extent to which they focus mainly on environmental issues or have a broader agenda for social change.

In Britain the “winner-takes-all” electoral system has made it extremely difficult for new political parties or for small parties to gain representation in Parliament. The British Green Party earned 15 percent of the vote in the 1989 European Parliament elections. However, because of the electoral system, the Green Party received no seats. This situation again draws attention to the difficulties posed for minor parties by electoral systems. Despite strong support for the green movement in Britain, there is little prospect of a green party gaining electoral representation. The Green Party split into three separate parties in 1990: the Green Party of England and Wales (which in 2018 had one member of parliament in the House of Commons, one representative in the House of Lords, and three members of the European Parliament); the Scottish Green Party (with six representatives in the Scottish Parliament); and the Green Party in Northern Ireland (with two seats after the 2017 Northern Ireland Assembly election). The primary sphere of influence of the green parties in Britain has been in elections to local and district councils.

In Sweden, the greens took longer to achieve political impact than similar parties in other countries. The Swedish Miljöpartiet de Gröna was founded in 1981. In 1988, it made a significant breakthrough when it became the first new party in 70 years to gain representation in the national parliament. Like other green parties, its success has varied. In 1991 it did not win any seats, but in 1994 it gained 18 seats. After the 1998 parliamentary elections, the Social Democrats were able to stay in power because of the support they received from the Miljöpartiet de Gröna and the Left Party. In the 2006 elections, they won 5.24 percent of the vote and 19 seats. In the 2014 general election they received 6.9 percent of the vote (25 seats) and were invited to enter government in a coalition with the Social Democratic Party, forming a minority coalition government. In the 2018 election, the Miljöpartiet de Gröna received only 4.4 percent of the vote (16 seats), making it the smallest party in the Riksdag.

Bündnis 90/Die Grünen in the Federal Republic of Germany is one of the most successful green parties in Europe, and certainly the one that has received the most attention and publicity. In the 1960s, citizens’ initiatives began to emerge in West Germany. They played a central role in the rise of protests against nuclear power projects from the 1970s. Their opposition was given an added impetus by the partial meltdown of the Three Mile Island nuclear power plant in 1979 and the 1986 catastrophe at the Chernobyl nuclear power plant near Kiev, in the Soviet Union. Chernobyl highlighted the difficulty of dealing with the global consequences of human interventions into the environment at the national level as radioactive clouds spread across many European countries and induced governments to impose bans on the consumption of some foods. Protests were regularly initiated at the local level by communities where nuclear facilities were to be built or were operat-

ing. Though local in origin, these protests rapidly took on a national character. They laid the basis for the formation of green lists and parties competing at the local, regional, and then national level.

This is partly due to the high visibility obtained by the party as part of the Red-Green coalition under Chancellor Gerhard Schröder from 1998 to 2005. Joschka Fischer of Die Grünen served as foreign minister and was considered Germany's most popular politician for much of this time. In its position as junior partner in the coalition, Bündnis 90/Die Grünen pushed hard on issues it held dear. It succeeded in passing legislation for the phased shutdown of Germany's nuclear power plants. It also won support for ecological tax reform, which raised taxes on polluters, making it possible to cut income taxes. Germany also maintained its position as a frontrunner on climate change legislation during this time.

The visibility of the party, however, extends back to earlier times, before the unification of Germany. After its election into Parliament in 1983, Die Grünen pushed for regulatory change on a wide variety of issues, including the highly visible problems of acid rain and nuclear energy, which in the post-Chernobyl era took on a new significance. The party was also a prominent voice in the peace movement during the Cold War. The program of Die Grünen, with its emphasis on peace, ecology, equality, and anti-nuclear energy, became a model for other parties.

Yet the formation, development, and agenda of the party have also served to highlight many of the dilemmas confronting green parties in general. In its earlier days, prior to the unification of Germany, Die Grünen experienced conflicts over adherents' dual membership in Die Grünen and other political parties, the professionalization of the party and how it should treat its most prominent figures, the limits and possibilities of implementing direct or grassroots democracy and the imperative mandate, and the possibility of coalitions with other parties, notably the Social Democrats. The party also struggled over its failure to actively support German unification and how to deal with the different values and agenda of the greens in East Germany, which were often far more supportive of capitalism than were members of Die Grünen. Internal party debates were also intense regarding the decision by the Red-Green coalition to support sending troops to Bosnia as part of a peacekeeping mission.

While for a time the future of Bündnis 90/Die Grünen was not so clear, the party has continued to do quite well at the federal level (winning 8.4 percent of the votes in 2013 and 8.9 percent in 2017) and very well at the state (Land) level. At the start of 2019, Bündnis 90/Die Grünen were in coalition governments in 9 of the 16 German Länder: Baden-Württemberg (where the minister president, Winfried Kretschmann, is a Green), Berlin, Bremen, Hamburg, Hesse, Rheinland Pfalz, Sachsen Anhalt, Schleswig-Holstein, and Thüringen. The Austrian greens (Die Grünen–Die Grüne Alternative) were also a strong

voice in Europe, at least until 2017. The party was represented in the national parliament (Nationalrat) for 31 years and won more and more votes with time (4.83 percent in 1986, reaching 7.4 percent in 1999 and 12.42 percent in 2013), until it failed to win enough votes to reenter the parliament in the 2017 election (3.8 percent). Alexander Van de Bellen, former leader of the Austrian Green Party, running as an independent, won the Austrian presidential election in 2016.

## **GREEN POLITICS IN THE EUROPEAN PARLIAMENT**

Another arena for parliamentary activities and influence by national green parties has been the European Parliament. When elections to the European Parliament were first held in 1979, the green movement throughout Europe had scarcely begun to organize itself to run in elections on either a regional or national level. Partly due to its size but also voter interests, Germany sends the single largest number of green MPs to the European Parliament. In 1984, Die Grünen gained 7 of the 12 seats that went to green parties in the European Parliament and joined their fellow greens in forming Green-Alternative European Link. After the 2014 election, 13 of the 52 members of the Green-Alternative European Link were from Germany and 6 from France (Europe Ecology–The Greens [Europe Écologie Les Verts]). Concerns about the rise of the far right party, Alternative für Deutschland (AFD), in Germany led to a surge in support for Germany's Bündnis 90/Die Grünen in the 2019 European Parliament elections. Bündnis 90/Die Grünen and four other small parties together captured one-third of all seats won by the Greens-European Free Alliance party grouping. Much as Die Grünen has transformed environmental politics in Germany, the green parties have had a noticeable impact on the direction of European politics. In Germany, Die Grünen's success in transforming German environmental programs was less a result of any bills it introduced into the Diet than a result of the influence the party exerted on the traditional parties. The traditional parties felt threatened by The Greens' sudden rise and did their best to co-opt its agenda by picking up many of its agenda items. Similarly, just by their presence, the Green Alternative European Link attracted attention to environmental concerns at the European level.

The influence of green parties in the European Parliament has grown substantially with time. In 1984, green parties for the first time entered the European Parliament with 12 representatives. In 1989 they improved their position to 27 seats. In 1994 they dipped to 21, but with the expansion of the European Union (EU) to include Sweden, Austria, and Finland, their numbers improved to 26, and subsequently three other parliamentarians chose to



join the group, raising their number to 29. After the 1999 election, they surged to 48 seats, and after some reshuffling following the 2004 election, they were still strong at 42 (5.7 percent of the vote). Their numbers have remained in similar ranges in subsequent years. In 2009 they had 55 seats (7.5 percent of the vote), in 2014 49 seats (6.5 percent of the vote), and in 2019 an astonishing 74 seats (11.7 percent of the vote). They are the fourth-largest political group in the European Parliament.

In an effort to achieve greater coherence, the green parties in the parliament decided in 1993 to form the European Federation of Green Parties. In 1999, they aligned with the European Free Alliance, a group of parties espousing self-determinacy for Scotland, Wales, and Catalonia, while sharing the greens' goals of democracy. In 2004, with the EU expanding its membership to include a group of eight central and eastern European states and two southern European ones, the European Federation of Green Parties/European Free Alliance decided it was important to strengthen their unity. They therefore formed the European Green Party. Since then, the European Green Party has worked to strengthen its common vision. The European Green Party accepts the European Union as an international project for peace and human rights. It desires to transform the EU into a model of sustainability and a safeguard of the European social model. Beyond this, it calls for enhancing the democratic characteristics of European institutions and promoting the sense of community.

Nevertheless, there is still considerable diversity among the green parties. Greens tend to share a commitment to democracy and decentralization, gender equality, peace, and sustainability. Their positions on the formation of the EU and other similar regional economic and political blocs, however, vary significantly. As a matter of policy, green parties contested some of the trends toward European unity, arguing instead for a "Europe of the regions." This was consistent with their focus on decentralization and autonomy and their distrust of huge, centralized bureaucracies. While these issues served to unite green parties, there were disagreements among their delegates over the value of working in the institutions of the EU; these disputes reflected the tensions that emerged between realist and fundamentalist factions at the national level. While some, such as the Swedish Miljöpartiet de Gröna, were opposed to their government's participation in the EU until the party's position changed in 2008, others, like Les Verts in France and GroenLinks in the Netherlands, supported the passage of the European Constitution despite strong domestic public opinion against it. Thus, while the European Greens may be the first major international political party in the world, in many ways, it remains more a federation than a unified party. In 2019, the European Greens had 37 member parties and organizations from 33 European

countries. There were also several candidate members (from Croatia, South Tyrol, Italy, and Turkey) and associate members from Azerbaijan, Belarus, and Russia.

Still, as the EU has become increasingly institutionalized and influential, both vis-à-vis national and international policy, many of even the most skeptical of the green parties toward the EU experiment have focused their attention on ways in which they might influence the development of the EU's institutions and policy decisions. A key issue for them has been strengthening the role of the European Parliament, due to its being the sole citizen-elected body in the EU. They have also demanded greater adherence to the subsidiarity principle, which calls for decisions to be made at the lowest governmental level that is practical for addressing a problem. This is consistent with their preference for decentralization. They also have pushed for a strengthening of the community's focus on alternative energies, safe foods, climate change, sustainability, and quality-of-life issues.

## **GREEN PARTIES IN CENTRAL AND EASTERN EUROPE**

Green parties are now present throughout central Europe. All of the 13 states that joined the EU between 2004 and 2017 (Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovenia, Slovakia) have formed a green party or green political organization in the post-1989 period. The success of the parties, however, has varied enormously. Only in a handful of these countries have green politicians succeeded in winning representation in national parliaments.

In many former eastern European communist countries, environmental movements played a critical role in the struggle against the oppressive regimes. The visibility of environmental movements in the late 1980s struggle against the communist governments led many to predict that green movements would continue to play a major role in politics. Initially, it looked as though this might indeed be the case as green parties sprang up throughout the region. Yet, as the states began to go through the difficult transitions from socialism to capitalism and from communism to democracy, public attention quickly shifted to economic problems. People were more concerned with economic collapse, the closing of industries, and the wide-scale unemployment they saw around them than with the sizeable pollution problems that still affected them.

This was the case in Hungary, for example. In the mid-1980s, environmental groups emerged to protest some of the development decisions of the communist rulers. The Danube Circle, for example, fought against the building of the Gabčíkovo Nagymaros hydroelectric dam. These groups became

increasingly critical of the state and provided a forum for political debate in an otherwise tightly controlled system. In 1990, as the communist regime was collapsing, the green movement coalesced and formed the Hungarian Green Party. In the first elections in post-communist Hungary, however, it failed to win a sufficient share of the votes to gain any representatives. This led to an internal struggle, and in 1993 the party was transformed into a far-right, anti-immigrant party. Environmentalists disassociated themselves from the party and quickly regrouped, forming the Green Alternative (*Zöld Alternativa*). The party has struggled to gain acceptance and win supporters. In 2000, it tried to improve its status by changing its name to Green Democrats (*Zöld Demokraták*), but seemingly to little avail.

A somewhat analogous situation prevailed in Czechoslovakia. As in Hungary, the environmental movement in Czechoslovakia played an important role in the eventual downfall of the communist regime. It was one of several movements that during the mid-1980s questioned the policies and structure of the communist regime. Environmental organizations included *Brontosaurus*, the Czech Union of Nature Protectionists, and the Slovak Union of Protectionists of Nature and the Countryside. The Czechoslovakian Green Party formed in 1989. Also, as in Hungary, the party failed to capitalize on its role in bringing down the communist system. The agenda of the greens became less relevant as the government struggled with the economic and social consequences of the fall of communism and the introduction of a free market system. The party failed to win sufficient votes to win representation in Parliament. The development of green (and other) political associations in Czechoslovakia was further complicated by the divisions between the Czechs and the Slovaks. Once the country dissolved into two separate states, the Czech and Slovak Republics, distinct green parties emerged in each.

Green parties have had difficulty in the political arena throughout most of the region in Bulgaria, Estonia, Lithuania, Poland, Romania, and Slovakia. In the 1990s, attention in Eastern Europe was directed toward economic development and reconstruction, often along the lines of a free market system modeled on the United States' system. Green movements struggled in this environment. There are some signs that in the future, the parties may have a greater impact. Greens made inroads in the Czech Republic and have done well in Latvia. In January 2007, after more than half a year of political uncertainty following an indecisive election, the Czech Greens (*Strana zelených*) were reluctantly invited into a coalition government by President Vaclav Klaus (even though Klaus in a 2007 speech to the U.S. House of Representatives called environmentalism a threat to freedom and said that "Communism was replaced by the threat of ambitious environmentalism!"). The Czech Greens won 6 percent of the vote in the June 2006 election, winning them six seats in Parliament. Martin Bursik served as environment minister. Since 2010, however, the party has failed to enter parliament. In the

case of Latvia, the leader of the Latvian Greens, Indulis Emsis, became prime minister for 10 months in 2004 when the previous government collapsed. In 2015, Latvia elected Raimonds Vejonis, the first Green Party member elected to serve as a president anywhere in the world. Unlike many other green parties, the greens in Latvia are a center-right party; they won 19.5 percent of the votes in the 2014 parliament (Saeima) election.

While, on the whole, in the transition states of central and Eastern Europe, green issues have been on the back burner, dedicated green activists continue to push environmental agendas. There have been various vigorous green political campaigns, such as in Ruse, Bulgaria, where there were strong protests against pollution from chlorine emissions at a factory in Giurgiu, a town across the Danube in Romania. Green political organizations, such as the Ruse Committee, the Independent Union Ekoglasnost, and the Bulgarian Green Party, have all contributed to the powerful articulation of environmental concerns.

## **GREEN PARTIES AROUND THE WORLD**

Although green parties now exist in most developed countries and in several less developed ones, their fortunes have been mixed or subject to rapid change. Institutional factors and the response of traditional political organizations have played an important part in these processes. As in Europe, in some countries, green parties have been able to benefit from the existence of electoral systems based on proportional representation. In many countries, green parties have had little impact in elections, either because of the rules and regulations that govern the process or because traditional political organizations have successfully adapted to the challenges issued by the green movement. In a handful of countries, green parties are not allowed or have been banned.

In the development of green parties, Australia and New Zealand are interesting for a number of reasons. Green political organizations originated there earlier than in many European countries. The United Tasmania Group was one of the first green political organizations ever to compete in state elections. Formed in the same year as the New Zealand Values Party, its purpose was to challenge government policies that led to flooding Lake Pedder in order to create a hydroelectric system. The manifesto of this political association was compatible with many of the broader aims of the green movement, including participatory democracy, more harmonious relationships between human beings and nature, and social justice. The New Zealand Values Party was one of the first endeavors by political activists to establish themselves at a national level on a platform that advocated both environmental protection

and participatory democracy. Ideas from Europe and the United States, particularly from *The Limits to Growth* and *A Blueprint for Survival*, permeated the manifesto of the new party. Its manifesto was called *Blueprint for New Zealand*. These parties draw attention to the diversity of issues that can be used to launch campaigns for environmental protection. They also highlight the importance of political associations that did not bear the name “green party” even though they focused primarily on environmental issues. In both countries, green political organizations were formed as early as 1972.

The influence of the green movements and parties in Western Europe on the development of green movements in other parts of the world is unmistakable. Green parties were largely a European phenomenon into the late 1980s. Since the collapse of communist and authoritarian governments in central and Eastern Europe, Africa, Latin America, and East Asia, the possibilities for green movements and parties has improved substantially. The political landscape has altered, and this has provided activists with new possibilities. One of the striking phenomena in the period since 1990 has been the rapid spread of green parties to most parts of the world. The question for the coming decade will be whether these parties, the vast majority of which are basically politically impotent, will be able to strengthen their political standing.

Green parties are also gaining toeholds everywhere. Green parties or green proto-parties have formed in Africa (e.g., in Benin, Kenya, Nigeria, and South Africa), Asia (e.g., Bangladesh, India, Pakistan, Japan, South Korea, and Taiwan), Israel, Latin America (e.g., Brazil and Mexico), and North America. While the United States has given rise to a powerful green movement, it has not been able to form a strong green party. The U.S. electoral system presents a major hurdle to the participation of new political organizations in presidential campaigns, and green associations have performed poorly in presidential contests. While Ralph Nader did make it as a third-party (Green Party) candidate in the 2000 presidential election, he received only 2.7 percent of the vote and may have contributed to the electoral loss of Democratic presidential candidate Al Gore. Similarly, Jill Stein who received 1 percent of the popular vote, probably took some votes away from Hillary Clinton in the 2016 U.S. presidential election.

In most countries outside of Europe, green parties are still small and primarily operating at the local level. The Greens in Israel (established in 1997), for example, has won no seats in the Knesset but is represented at the municipal level. It is an expression of intent by environmental activists who believe that establishing a political wing of a green movement is important to achieve their vision. In a few countries, however, green parties are making electoral inroads. This has been the case in Benin, Brazil, and Mexico. In 2003, the Green Party of Benin was able to send three delegates to Parliament. That same year, the Ecologist Party of Mexico did sufficiently well in

the election to the Chamber of Deputies to send 17 representatives. After the 2006 election, there were 13 Green Party representatives in the Chamber of Deputies in Brazil. In 2012, the Green Confederation in Vanuatu won 3 of 52 seats in the national parliament. Its candidate, Moana Carcasses Kalosil, became prime minister in 2013, the only green minister in the coalition cabinet, but he lost a no-confidence vote the next year.

There are also clandestine green parties. The Green Party of Iran, which was banned by the Islamic Republic government, has operated from abroad, initially out of California and since 2014 out of Germany. The Green Party of Saudi Arabia was created clandestinely in 2001 in Saudi Arabia, disappeared between 2009 and 2012, but since 2018 apparently has had a Facebook page run secretly and illegally by Akhdir Alnnadi ([greenpolitics.wikia.com/wiki/Green\\_Party\\_of\\_Saudi\\_Arabia](http://greenpolitics.wikia.com/wiki/Green_Party_of_Saudi_Arabia)).

As green parties form in other parts of the world, they too are beginning to form federations in order to try to strengthen their voice and to cooperate on key objectives. Thus, there is now a Federation of Green Parties of Africa, an Asia Pacific Green Network, and a Federation of the Green Parties of the Americas. In 2001, the Global Greens was formed as a network of green parties and organizations from around the world.

## ENVIRONMENTAL NONGOVERNMENTAL ORGANIZATIONS

While in some countries green parties have been at the forefront of green activism, in many places (including in countries with green parties), the green movement has at its core nongovernmental organizations (NGOs). A variety of groups has emerged and relied on different tactics to influence governmental, corporate, and societal behavior.

Peace and nonviolence has been an important theme in the development of some groups within the green movement. Many groups in the anti-nuclear protest movement that emerged in the 1970s presented nonviolence as one of the axioms guiding their activities, and this notion was adopted by Die Grünen in Germany as one of its four core principles. As with the Chipko Andolan movement in India, many other supporters of the green movement have been influenced in this regard by the writings and practices of Mahatma Gandhi and his followers in the campaigns against British rule in India.

Other groups have favored direct action. Among the more radical groups in the green movement are Greenpeace, founded in 1971; the Sea Shepherd Society, formed in 1977; and Earth First!, formed in 1980. All three organizations promote some form of direct action, which can involve breaking the

law, although they are not always approving of each other's approaches. Of the three organizations, Greenpeace has been the most successful in attracting public attention to environmental problems.

The formation of Greenpeace reflects the close links between the protests of the 1960s and the green movement. It was formed by activists who, following their involvement in demonstrations against the Vietnam War, campaigned against the testing of nuclear weapons in the atmosphere around the Aleutian Islands. Greenpeace specialized in provocative actions designed to capture the attention of the media. Its protests were carried out by small groups of professional activists and involved risky actions such as the 1973 attempt to penetrate nuclear-test sites. However, after experiencing a precipitous decline in its support base in the 1990s, Greenpeace has become a more conventional environmental group. While it still engages in direct action, it is also heavily involved in conventional lobbying activities. It claims that in pursuing its mission, it uses "research, lobbying, and quiet diplomacy" as well as "high-profile, nonviolent conflict." Its campaigns now focus on climate change, marine and forest protection, disarmament, opposition to genetically modified organisms, an end to the nuclear age, and sustainable trade.

Greenpeace is still rather conventional in the context of the democratic participation espoused by many champions of the green movement. Although the organization has a vast number of supporters in many countries, it is run on rather hierarchical lines with fairly strong central control. Indeed, the organization has been criticized by some for becoming too large and bureaucratic and for functioning too much like the multinational corporations it criticizes. In contrast, Earth First! followed a more militant approach and was labeled an ecoterrorist. In the mid-1990s, Earth First! renounced the use of violence, but this led to a split in the organization and the formation of the even more militant Earth Liberation Front, which gained notoriety for setting fires at a ski resort in Vail, Colorado.

To attract media attention, green activists have pursued many strategies, ranging from blocking the entrance to nuclear power installations to prevent the transport of nuclear waste materials in Germany, occupying construction sites of the Keystone XL Pipeline in North Dakota, or climbing the tallest power plant in Katowice, Poland, during the climate negotiations. Still, green activists have not always agreed on forms of civil disobedience, and not all have embraced the tactics of Gandhi.

Commitment to environmentalism manifests itself with different levels of intensity and in a variety of ways. Persons who are regarded as being radical or fundamentalist in their outlook may espouse a non-anthropocentric philosophy. In other words, they may take the viewpoint that nonhuman forms of life are valuable irrespective of their importance to human beings. They may also engage in militant opposition to established political institutions, although this is not necessarily the norm. Many members and supporters of

green political associations may prefer to work through traditional channels of the political system (such as major political parties and interest groups), even though they share certain broad objectives (for example, the preservation of the environment) with the radical activists.

On the more conventional side, the Sierra Club embodies the strong traditions of the green movement in the United States. It has focused on lobbying government to protect and preserve the environment, particularly to create national parks. In the early 1990s, the club had well over half a million members and had considerably broadened its agenda to incorporate issues like the protection of endangered species, population growth, and the greenhouse effect. Friends of the Earth (created in 1969 by David Brower, who had been forced to resign as executive director of the Sierra Club) maintained the notions of democratic participation and grassroots involvement advocated by student and other radical movements of the 1960s. Branches that emerged throughout the Western world were given considerable independence in how they organized themselves and in setting their own agenda.

The WWF (known both as the World Wildlife Fund and the World Wide Fund for Nature) is another highly influential lobbying group. Assisted by dignitaries such as Prince Philip, it has become one of the most successful organizations in raising funds for conservation projects and promoting dialogue between nongovernmental organizations and agencies of the United Nations. It has also shaped the conservation policies of many governments. In 2019 it had almost six million supporters and operated in more than 100 countries. The WWF supports numerous projects in these countries and has been extremely effective in disseminating information about conservation issues.

Some environmental organizations, such as the Natural Resources Defense Council (NRDC), have made regular use of the courts to challenge governmental decision-making procedures, to pressure the Environmental Protection Administration, to enforce environmental laws, or to draw attention to environmental injustices. The NRDC has 3 million supporters, giving the organization substantial clout. It has been able to mobilize many of its supporters as online activists. Whereas the NRDC has scientists and lawyers as its core staff members, the Environmental Defense Fund (EDF), another highly effective and influential NGO, relies heavily on environmental economists. Like the NRDC, EDF makes common use of the courts. Its origins are in its lawsuit to end the use of DDT to protect osprey, bald eagles, and peregrine falcons. While it continues to make regular use of litigation to achieve its environmental-protection goals, it also uses its in-house expertise to formulate legislative proposals. The 1990 U.S. Clean Air Act's sulfur dioxide emissions trading system originated in EDF.



The rise of the green movement in the second half of the 20th century, though most concentrated and visible in the formation of new political associations (as well as the revival of some old ones) in Western Europe, was not confined to one continent. Reflecting the international character of the movement, political organizations and interest groups arose on most continents in the 1970s. In Latin America, the Gaucha Association for the Protection of the Natural Environment in Brazil emerged in 1971. From 1974 on, hundreds of green groups were formed throughout Brazil, and the first members of the green movement were elected to state assemblies in 1982. In Japan in the 1970s, spurred by the plight of the victims of Minamata mercury poisoning, thousands of environmental citizens' movements arose to protest the severe pollution afflicting their country and to pry open a decision-making system that tended to focus on the concerns of business to the exclusion of society. In India, one of the most interesting initiatives to boost awareness about environmental problems was the creation in 1973 of the Chipko Andolan movement (involving mainly women in villages). The protestors were principally concerned with preventing logging firms from destroying forests, which were a vital source of fuel and food. To achieve their goals, the protestors used the nonviolent resistance advocated by Gandhi. The Chipko Andolan movement secured some important concessions from the government. Significant initiatives in other countries were the movement to prevent logging in Malaysia led by Sahabat Alam Malaysia (the Friends of the Earth organization in Malaysia) and the Green Belt Movement for planting trees in Kenya.

There are now thousands of NGOs around the world that espouse many of the goals and values of the green movement. The structure, size, and approaches of these groups are often dependent on the political system in which they operate. Their goals, moreover, are usually closely tied to the pressing concerns facing their own countries, rather than more distant populations. Thus, in densely populated and rapidly developing countries such as Korea, organizations like Green Korea United or the Korean Federation for Environmental Movement (KFEM) tend to focus on preventing environmentally destructive development plans and promoting open and democratic decision making. These organizations, while relatively large in size (Green Korea United claims 15,000 members and KFEM, 85,000), are nowhere near as rich as the large environmental NGOs in the United States and Europe. They have relied on demonstrations, lobbying, and educational activities to advance their goals. In 2012, they formed Green Party Korea.

In neighboring Japan, there are also many green interest groups, but they tend to be very small, having only a few dozen to a few hundred members. The largest groups (WWF Japan and the Wild Bird Society) both have fewer than 50,000 members. While the situation of the green interest groups has been improving with the passage of new legislation easing the rules govern-

ing nonprofit organizations and greater governmental acceptance of the role that can be played by NGOs, the groups remain limited in their ability to influence policy developments.

In India, the world's largest democracy, there are many environmental groups. Some are national, like the Indian Youth Climate Network; some are offshoots of international groups, like Greenpeace India; others are set up by the government, such as the National Green Corps; and many are regional, such as Delhi Greens or the Society for Andaman and Nicobar Ecology.

Even in authoritarian states, green groups are gaining a foothold. China now boasts thousands of environmental groups. As in India, some are offshoots of international nongovernmental organizations, like WWF China, Wildlife Conservation Society China, Friends of Nature China, Nature Conservancy China, and Natural Resources Defense Council, China. Others emerged locally, like Global Village of Beijing, Green Anhui, and China's Green Beat.

## **TRANSFORMING THE MAINSTREAM**

Traditional political, social, and economic organizations have been selective in their response to challenges by the green movement. They have been reluctant to adopt aspects of environmentalism that may undermine economic requirements and electoral considerations. The heavy costs of environmental degradation, however, have become too high for many of even the most ardent adherents to neoliberal economic agendas to ignore. In fact, most governments in the industrialized world have already found it necessary to embrace at least some aspects of the green movement's agenda. Regulations controlling harmful pollutants, protection of endangered species, policies requiring environmental-impact assessments, and rules governing access to environmental information have become commonplace in most industrialized nations.

Problems such as acid rain, ocean pollution, climate change, and biodiversity loss continue to raise crucial questions about current economic practices. The emphasis on growth and consumption that drives political, social, and economic behavior in most parts of the world suggests that the importance of sustainability has yet to be widely understood or embraced. Yet, as the environmental problems facing the planet become increasingly hard to ignore, governments are finding they have little choice but to turn to the ideas that have been proposed by the green movement: sustainability, participatory decision making, safe foods, alternative energies, and international cooperation. While some elements of the green agenda are likely to remain controversial and anathema to some actors—such as the strong opposition to nucle-

ar energy and genetically modified organisms—many of the goals of the green movement have the potential to become mainstream (e.g., support for alternative energies).

The impact of the green movement on society and traditional political parties has already been quite significant. The green movement has contributed to and been part of a huge shift in perceptions about how we relate to the environment, what Ronald Inglehart saw as part of a silent revolution and a shift toward postmaterialist values. Recycling, once a fringe idea, has become mainstream in many parts of the world. Renewable energy, once a pipe dream, is now the world's fastest growing source of new energy. Organic agriculture, once viewed as something to be escaped from with modern agricultural techniques, is being embraced in many wealthy countries seeking a return to foods free of pesticides.

The green movement has opened up debates on the quality of life. For some, it has entailed rejecting economic growth and industrial development as the principal measures of the quality of life, such as with the slow food movement born in Italy. Apart from a strong focus on environmental protection and preservation, the green movement has stimulated discussions on the quality of life in the workplace, in family relationships, and in local communities. This debate has had a significant impact on traditional political organizations, which have developed agendas that cover issues pertaining to immigrants, LGBTQ communities, minorities, indigenous communities, single parents, and women. In addition, the green movement has been influential in persuading governments to extend the notion of quality of life to include, in an explicit manner, the notion of stewardship of nature.

Environmental nongovernmental organizations have championed the causes of victims of environmental disasters. Numerous environmental and other organizations have sought to aid the victims of the 1984 Union Carbide pesticide plant explosions in Bhopal, India. Their efforts also helped trigger the passage of legislation setting up the Toxic Release Inventory in the United States. Similarly, environmental groups sought to hold Exxon accountable for the *Exxon Valdez* oil spill. Their efforts played into the push for new legislation regarding oil tanker safety. Similarly, after the tragedy of the deadly explosions on BP's Deep Horizon oil platform in the Gulf of Mexico, environmental groups kept the drums beating, which played no small role in the sweeping changes made to the rules and regulations governing offshore oil and gas facilities.

They have also taken up the fight to protect the environment from humans' destructive tendencies. Their voices have been powerful in putting the issue of plastics onto the global agenda. Their boycotts, campaigns, and cooperative actions have pressured companies to take their social and environmental responsibilities more seriously. Distrustful of nuclear energy and concerned

about global climate change, green organizations have long backed the development of alternative energies, including wind and solar power, biofuels, and cogeneration.

While the green movement is not united in its views of capitalism, activists share a belief in the need to deepen environmental considerations in international relations. In general, the green movement has argued that nations have focused too much on the promotion of neoliberal economic agendas and free trade, to the detriment of environmental protection and local communities.

Over the past several decades, a strong consensus has emerged in the green community that human activities, ranging from burning fossil fuels to large-scale deforestation, are contributing to the rapid warming of the Earth's atmosphere. The release of greenhouse gases (most notably carbon dioxide) into the atmosphere is warming the Earth's surface temperature. Green movements increasingly recognize that the consequences of global warming could be catastrophic. With rising global temperatures, climatic conditions are expected to change throughout the world. As glaciers and Arctic and Antarctic ice melts, sea levels are expected to rise, inundating many coastal areas. Hurricanes are likely to increase in number and intensity. Damage wrought by extreme weather patterns could displace millions of people, adding to global pressures for migration. Species that are not able to adapt could face extinction. Although the green movement was not very active on the matter of climate change prior to the late 1980s, many greens are now calling climate change the most vexing and serious environmental problem to face the planet. Environmental groups have become increasingly involved in the issue of climate change, either through mitigation or adaptation. Indeed, for many organizations, climate change is now their single most important campaign issue. It has also become one of the most important issues for many governments. Greta Thunberg's formation of the student-led movement Fridays for Future has raised the voices of young people in the climate debate. Their school boycotts have captured the attention of the global media. The group Extinction Rebellion, formed in the UK, calls for civil disobedience to gain media attention on an issue that is so serious it could lead to human extinction if political action is not taken now. Mounting scientific evidence that climate change is happening even faster than expected, plus the pressure from such groups, led the UK Parliament to declare a climate change emergency in 2019.

As the climate change case suggests, green ideas are no longer simply the purview of environmental groups and green parties. They have become increasingly mainstreamed and embraced by leading figures in traditional political parties. Prime Minister Gro Harlem Brundtland of Norway chaired the World Commission on Environment and Development from 1984 on. British prime minister Margaret Thatcher used an address to the Royal Society in 1988 to express concern about the greenhouse effect, the depletion of the

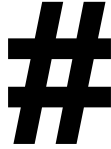
ozone layer, and acid rain. Bob Hawke, prime minister in Australia from 1983 to 1990, placed the environment high on the country's political agenda and introduced many reforms. Former U.S. vice president Al Gore sought to galvanize the world into action through his educational documentaries on climate change *An Inconvenient Truth* (2006) and an *Inconvenient Sequel: Truth to Power* (2017). British prime minister Tony Blair, German chancellor Angela Merkel, and French president Emmanuel Macron made addressing climate change one of their leading priorities.

Still, the voices of the greens remain important as the forces pushing mainstream, short-term, profit-oriented thinking still dominate. One of the biggest challenges for the green movement in the coming years will be confronting the surge of right-wing populist movements and parties gaining ground around the world. Many populist parties are signaling discontent with the gains made by the green movement over the past several decades. Their influence has been strong in recent years in the United States and can be linked to the anti-environmental positions of the Donald J. Trump administration. Similar tendencies may be emerging in Brazil, where President Jair Bolsonaro has called for development of the Amazon region.

A further challenge will be in assisting China, India, and other transitioning and developing countries to transform their economies. The world's population is likely to grow to somewhere between 9 and 11 billion people by the end of the century. Africa could see a doubling of its population by 2050.

There are some positive signs. Environmental awareness is growing in many parts of the world. There has been a virtual explosion of environmental movements since the 1990s in Asia, Latin America, and Africa. There are also many proto-green parties and some green parties that have formed in these parts of the world. The form that green activism takes, however, may be less important than the impact that green activists can have on policy outcomes. This will mean paying attention not only to environmental values but also to forms of public participation in decision making. The formation in recent years of international networks of environmental movements and green organizations (e.g., Global Greens) suggests that the movement is trying to strengthen its own ability to influence change in different parts of the world and at the global and regional levels.





**1% FOR THE PLANET.** Founded in 2002, this organization aims to encourage donations from companies for environmental protection. Member companies donate at least 1 percent of annual sales for sustainability initiatives that they choose. 1% for the Planet now has more than 1,200 member companies in 40 countries, and it has fundraised more than US\$175 million.

**2-DEGREE TARGET.** The fifth assessment report of the **Intergovernmental Panel on Climate Change (IPCC)** published in 2014 suggests that it is possible to limit global warming to two degrees Celsius above preindustrial levels. If the global average temperature increases more than two degrees, scientists fear serious, and possibly irreversible, climatic consequences. Countries gathered at the 15th Conference of the Parties (COP15) held in Copenhagen in 2009 agreed to the necessity of limiting global warming to two degrees by 2100. IPCC scenarios show that this would require reducing the greenhouse gas emissions of 2010 by at least half by mid-century and achieving near zero emissions by the end of the century. At the COP21 on the **United Nations Framework Convention on Climate Change (UNFCCC)** in Paris, 195 countries agreed to set a global goal of limiting the global average temperature increase to two degrees above preindustrial levels and to strive to limit the increase to no more than 1.5 degrees. *See also* THE PARIS AGREEMENT.

**350.ORG.** An international nongovernmental organization founded in the United States in 2008 with the aim of protecting climate. The organization's name refers to the goal of limiting carbon dioxide levels in the atmosphere to 350 parts per million (ppm), a level above which scientist James E. Hansen warned could lead to irreversible climate and environmental change. 350.org organizes climate marches and events, organizes protests (such as those against the Keystone Pipeline), and promotes renewable energy and fossil fuel divestment.





# A

**AARHUS CONVENTION.** The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention). The convention was adopted in the Danish city of Aarhus on 25 June 1998 and entered into force on 30 October 2001. The Aarhus Convention establishes various rights for the public (individuals and their associations) with regard to the environment. Parties to the convention must take measures to ensure that public authorities (at the national, regional, and local levels) respect these rights.

These include the right of access to environmental information held by public authorities, including on the state of the environment, the implementation of policies and measures, and the state of human health and safety as they relate to the state of the environment. Applicants are entitled to obtain this information within one month of making a request to authorities and without explaining why they are requesting it. In addition, public authorities are obliged to disseminate environmental information in their possession. The convention further established the right to public participation in environmental decision making. Public authorities must develop systems to enable affected members of the public and environmental nongovernmental organizations, for example, to comment on proposals affecting the environment or plans and programs relating to the environment, to ensure that these comments be given due account in decision making, and to provide information on the final decision and the reasons for it. A third right protected by the convention is access to justice through judicial review of public decision making processes.

**ABOLITION 2000.** This is a network of over 2,000 organizations in 90 countries that was established in 1995 on the 25th anniversary of the Nuclear Nonproliferation Treaty. Its goal is to rid the world of nuclear weapons through the establishment of an international treaty. In 2003, Abolition 2000

launched a new initiative, together with the mayor of Hiroshima: Mayors for Peace. The network supports the UN High Level Conference on Nuclear Disarmament.

**ACID RAIN (ACID POLLUTION).** Acid rain is a form of pollution caused by emissions of sulfur dioxide gas and nitrogen oxide gas from industrial plants, coal-burning power stations, and cars. Coal and oil are the main sources of these gases. Though primarily transported by rain, the acids also travel in snow, sleet, and fog. Pollution by acids has been noted for centuries in the British Isles. In 1880, smog in London brought about the deaths of 1,200 people. Similarly, in 1952 the deaths of over 4,000 people were attributed to smog over Greater London. The question of how to combat acid rain was a long-standing source of tension among national governments. This issue was a significant focal point of campaigns by environmental groups and was a key issue of early green movements and parties.

Since the 1880s, Scandinavians have been concerned about transboundary acid pollution originating in the **United Kingdom**. Damage to lakes and rivers and the loss of fish in Scandinavian countries were ascribed to acid pollution from other regions. In 1948, the Swedish government created a network of observers to record levels of acid pollution across Europe. In the 1960s, concern about this issue gained further stimulus when Svante Oden, a Swedish soil scientist, exposed the connection between acid pollution and damage to lakes. He used the term *acid rain* in describing these changes.

Pressure for international political action to deal with the problem arose first in Scandinavia, notably in **Sweden** and **Norway**. The problem of acid rain induced the Swedes to bring their misgivings to the United Nations, resulting in the **United Nations Conference on the Human Environment (UNCHE)**, held in Stockholm in 1972. The tensions between the Scandinavians and their neighbors Poland, the United Kingdom, and West Germany, thought to be the sources of the pollution problems, were matched by the disquiet among Canadians about acid pollution from the **United States**. In Europe, hard negotiations eventually led to the 1979 **Convention on Long Range Transboundary Air Pollution (CLRTAP)**, which was signed by 33 countries.

Scandinavian countries lobbied for further action, calling in 1983 for a 30 percent reduction of sulfur dioxide emissions by 1993. This led to the formation of the so-called Thirty Percent Club in 1984. By 1985, the club had 21 members, including many eastern European nations.

In the early 1980s, Scandinavian efforts toward international agreements received a significant political boost when West German public opinion became sensitized to the widespread destruction of their forests by acid rain. The success of **Die Grünen** in German federal elections contributed to a strengthening of environmental legislation. The United Kingdom, which at

first failed to join the Thirty Percent Club, committed itself to a policy of reducing emissions, albeit over a longer time frame. Environmental groups, such as Friends of the Earth, Greenpeace, and the **World Wide Fund for Nature (WWF)**, took up the issue of acid rain for the World Wide Fund in Europe and North America throughout the 1980s and 1990s.

In 1980, **Canada** and the United States signed the Memorandum of Intent Concerning Transboundary Air Pollution. This led to the creation of working groups to study the problem. Still, throughout the 1980s, neither country could agree on the implementation of an effective policy to deal with the U.S. sources of acid rain afflicting Canada. Within the United States, there were also significant problems with acid rain produced in the Midwest but affecting the Northeast of the country. After a decade of inaction, the George H. W. Bush administration proposed the 1990 Clean Air Act amendment. The legislation triggered a vast reduction in sulfur dioxide and nitrogen oxide emissions through the use of an **emissions trading** system.

Acid rain problems gained attention in East Asia beginning in the late 1980s, largely as a result of the heavy reliance on coal use in the **People's Republic of China**. China is now the world's largest source of sulfur dioxide. Beginning with its 10th Five Year Plan in 2001, China has been introducing progressively more stringent controls on coal in an effort to reduce acid rain and pollution. The emergence of transboundary acid rain problems in East Asia led to the formation of the Acid Deposition Monitoring Network in East Asia (EANET), which, as its name suggests, is monitoring the sources and consequences of acidic deposition in East Asia. Thirteen countries have joined the EANET: **Cambodia**, China, **Indonesia**, Japan, **Laos**, **People's Democratic Republic**, **Malaysia**, Mongolia, Myanmar, Philippines, **Republic of Korea**, **Russia**, **Thailand**, and **Vietnam**. **Japan** established the Green Aid Plan to promote technology transfer to China to reduce acid rain and improve energy efficiency.

**ACQUIS COMMUNAUTAIRE.** The entire body of law and court decisions of the European Union (EU) is known as the *acquis communautaire*. As one condition for acceptance into the EU, candidate countries must demonstrate that they have transposed this body of law into their own regulations. Chapter 22 of the *acquis communautaire* is devoted to the environment. As a result of this requirement, the 10 countries that joined the EU in 2004 (Cyprus, the **Czech Republic**, **Estonia**, **Hungary**, **Latvia**, Lithuania, **Malta**, **Poland**, **Slovakia**, and Slovenia) plus those that joined in 2007 (**Bulgaria** and **Romania**) and in 2013 (Croatia) greatly strengthened their environmental regulatory framework in a remarkably short period of time. The challenge for the coming decade will be adequate enforcement of the new laws and programs.

**ADAPTATION TO CLIMATE CHANGE.** *Adaptation* is an attempt to anticipate **climate change** effects and take preventative actions in order to become more resilient to the effects of changing temperature and weather patterns, such as droughts, floods, and temperature extremes. Adaptation requires the adjustment of societal activities in response to present, and in preparation for future, climate change impacts. Climate adaptation measures involve diverse actions and policies, including making buildings more resilient to extreme weather, building stronger and higher dikes against sea level rise, and developing drought-resilient plants.

Adaptation actions may be reactive, taking place after a climate change event or anticipatory of future climate change effects. Adaptation occurs mainly at the local level, where climate change effects are felt, but the local level may also benefit from supportive national policies for research and development as well as, for example, flood prevention. The effectiveness of climate-adaptation measures depends on both national and local players and institutions.

Adaptation is intertwined with climate change mitigation measures. How best to integrate the two is, however, contested as some fear that shifting attention to climate adaptation reduces attention to climate mitigation. Nevertheless, over the years, climate adaptation has gained more importance at the local, national, and international levels. Many countries have formed national climate-adaptation action plans and platforms for climate finance, technology, and knowhow. Civil society and the private sector are also involved in various adaptation actions. The United Nations maintains a database of climate adaptation and resilience actions.

**AFRICAN AMERICAN ENVIRONMENTALIST ASSOCIATION (AAEA).** Founded in 1985, this nonprofit aims at increasing African American engagement in environmental protection initiatives by delivering information and services directly into communities.

**AFRICAN BIODIVERSITY NETWORK.** A regional network of organizations seeking African solutions to the environmental and socioeconomic challenges of the continent.

**AFRICAN CONSERVATION FOUNDATION.** This conservation group was created in 1999 with the goal of fostering grassroots capacity for conservation initiatives and bringing the needs of human development into the equation when addressing natural resource management.

**AFRICAN CONVENTION ON THE CONSERVATION OF NATURE AND NATURAL RESOURCES.** A convention signed in Algiers in September 1968 by 33 African states that were members of the Organization of African Unity. The convention superseded the 1933 Convention Relative to the Preservation of Fauna and Flora in the Natural State. It came into force in 1969 and was largely the product of efforts by the International Union for the Conservation of Nature and Natural Resources, now known as the **International Union for the Conservation of Nature (IUCN)**, to promote conservation and the well-being of the population. Like many other conventions, however, little or no provision was made for the administration or implementation of the recommendations. The convention was revised in 2003 in Maputo to strengthen biodiversity protection. It took 13 years before this far more ambitious and demanding Maputo Convention, which places a “fundamental obligation” on parties to follow preventative and precautionary approaches to nature conservation, came into force.

**AFRICAN GREENS FEDERATION.** A coalition of green parties and political movements in Africa launched in 2010 during the African Greens Congress held in Uganda. Known as La Federation des Verts Africains (FEVA) in French, it was officially registered in June 2012. At the second Global Greens Congress held in Brazil in 2008 African representatives voiced their desire to establish a regional federation. Subsequently, Rwanda Green Society launched a capacity-building program for African Green parties supported by the Green Forum Sweden. The program enabled national green parties to better communicate with one another. It helped accelerate the formation of the African Greens Federation, which had 25 full and associate members in 2018: Partido Nacional Ecológico de Angola, Parti des Verts du Algérie (associate, Algeria), Rassemblement Des Ecologistes du Burkina Faso, Burundi Green Movement (associate), Union des Ecologistes Tchadiens—LES VERTS, Movement des Verts Congolais (associate, Congo), Parti Ecologiste Congolais-PECO (Democratic Republic of Congo), Egyptian Green Party, Green Party of Gabon (associate), Parti des Ecologistes Guineens (Guinea), Rassemblement des Verts du Côte d’Ivoire (associate), Green Congress of Kenya (associate), Parti Vert Hasin’l Madagasikara (Madagascar), Parti Ecologiste du Mali, Les Verts Fraternelles (Mauritius), Parti Gouche Verts du Maroc (associate, Morocco), Ecological Party-Movement of Earth (Mozambique), Rassemblement pour un Sahel Vert/Parti Vert du Niger, Democratic Green Party of Rwanda/Parti Democratique Vert du Rwanda, Convergence des Ecologistes du Sénégal (Senegal), Afrique Togo Ecologie, Parti Tunisie Verte (Tunisia), Ecological Party of Uganda, Green Party of Zambia, and UCAD Green Party of Zimbabwe (associate).

**AFRICAN SPECIAL PROJECT.** An initiative by the **International Union for the Conservation of Nature (IUCN)** to promote **conservation** and the economic, cultural, and scientific value of wildlife. The IUCN solicited the involvement of political elites in African states that had either gained independence or were about to do so. It organized the Pan-African Symposium on the Conservation of Nature and Natural Resources in Modern African States (held in Arusha, Tanganyika, in September 1961). The meeting was supported by the United Nations. The African Special Project provided a unique opportunity for African nations to articulate their views on the connection between conservation and their economic development. The African Special Project formed the basis for a dialogue that led to the signing of the **African Convention on the Conservation of Nature and Natural Resources** in 1968.

**AFRICAN WILDLIFE.** The threat to wildlife in sub-Saharan Africa has long been a concern of conservationists and remains crucial in mobilizing support for groups such as the **World Wildlife Fund (WWF)**. Ever since the late 19th century, when the **United Kingdom** and **Germany** colonized East Africa, governments have been concerned about wildlife destruction by white settlers, professional hunters, and the indigenous population. Concern about preservation of game animals led to the signing, in 1900, of the first-ever international environmental accord, the Convention for the Preservation of Animals, Birds, and Fish in Africa. The convention was signed by the United Kingdom, **France**, Germany, **Italy**, **Portugal**, **Spain**, and the Belgian Congo but never entered into force. Nevertheless, its impact was long lasting as it introduced the concept of schedules that placed animals in different categories of preservation.

In 1903, the goal of preserving wildlife also formed the rationale for the foundation of the first international environmental organization, the **Society for the Preservation of Wild Fauna of the Empire**, which focused on territories and colonies ruled by Great Britain. The German naturalist C. G. Schillings highlighted the plight of African wildlife in several popular works. These initiatives, however, did not reverse the trend of mass destruction. In 1933, the United Kingdom organized the International Conference for the Protection of Fauna and Flora, seeking to protect the natural habitat for wildlife. Although it was not legally binding on the signatories and lacked any mechanism for implementation, it helped raise awareness of the threats. The 1973 **Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)** was in part developed due to rising awareness of the threats that trade in species and species' parts in Africa posed to wildlife survival. *See also* AFRICAN WILDLIFE FOUNDATION (AWF).

**AFRICAN WILDLIFE FOUNDATION (AWF).** Founded in 1961, the African Wildlife Foundation is a leading international organization focused on protecting **African wildlife** and promoting **sustainable development** through community conservation and conservation enterprise techniques. The AWF addresses Africa's unique conservation needs, including illegal wildlife trade and raising awareness of the threats African wildlife faces.

**AFRICAN YOUNG GREENS.** Established during the First Global Young Greens Congress in Nairobi in 2007, the African Young Greens Federation has participated in the Global Young Greens conferences held in Berlin (2010), Dakar (2012), and Liverpool (2017). The 2017 Liverpool Congress pointed out the challenges faced by young greens in Africa, including financial difficulties, which mean many projects face implementation problems.

**AFRICAN YOUTH INITIATIVE ON CLIMATE CHANGE (AYICC).** Launched in 2006, the AYICC aims to build capacity and networks among youth to address climate change.

**AGENDA 21.** Agenda 21 is a nonbinding UN resolution for the promotion of **sustainable development** that was adopted by governments at the **United Nations Conference on Environment and Development (UNCED)** in 1992. The action plan has 40 chapters covering measures in four areas: society and the economy, conservation and management of resources for development, strengthening the role of major groups, and means of implementation. Some countries introduced local Agenda 21 action plans, as was recommended in chapter 28 of Agenda 21.

The **Commission on Sustainable Development (CSD)** was established in December 1992 in order to aid in the follow-up of the agreements reached at the UNCED, including Agenda 21. Each year, member states are to report to the CSD on implementation measures.

In 1997, the United Nations General Assembly, meeting in a special session, assessed the progress in meeting the goals of Agenda 21. A number of gaps were identified in addressing poverty and the continued deterioration of the global environment. The Johannesburg Plan of Implementation, agreed to at the **World Summit on Sustainable Development** held in 2002 in Johannesburg, **South Africa**, confirmed the United Nations' commitment to "full implementation" of Agenda 21, in addition to the **Millennium Development Goals** and other international agreements.

The Division for Sustainable Development of the United Nations Department of Economic and Social Affairs reviewed the implementation of Agenda 21 in 2012. It concluded that most of the chapters of Agenda 21 were not effectively implemented. It acknowledged, however, that Agenda 21 contrib-

uted to raising awareness of sustainable development, and reaffirmed its commitment to the goals in the outcome document, “The Future We Want.” The **Sustainable Development Goals**, also known as Agenda 2030, which the UN General Assembly agreed upon, built upon and furthered the aims of Agenda 21.

**AICHI BIODIVERSITY TARGETS.** *See* CONVENTION ON BIOLOGICAL DIVERSITY (CBD).

**ALLIANCE OF SMALL ISLAND STATES (AOSIS).** This group of small-island and low-lying coastal countries formed an alliance in 1991 based on their shared environmental concerns, and in particular their vulnerability to the effects of sea level rise caused by **climate change**. The idea behind the alliance is to strengthen the voice of small—and for the most part poor and vulnerable—states in international negotiations. The alliance has 44 member and observer-member states (as of 2018) spread across oceans and on the coastlines of Africa; the Caribbean, Mediterranean, and South China Seas; and the Indian and Pacific Oceans. They work together through their missions to the United Nations in New York and have a rotating chair. AOSIS played a major role in demanding that the 2015 **Paris Agreement** include a target to limit global warming to under 1.5 degrees Celsius. It was successful in having this become an aspirational goal of the agreement. Members include Antigua and Barbuda, the Bahamas, Barbados, Belize, Cape Verde, Comoros, the Cook Islands, Cuba, Cyprus, Dominica, the Dominican Republic, Fiji, the Federated States of Micronesia, Grenada, Guinea-Bissau, Guyana, Haiti, Jamaica, Kiribati, the Maldives, the Marshall Islands, Mauritius, Nauru, Niue, Palau, Papua New Guinea, Samoa, Singapore, the Seychelles, Sao Tome and Principe, the Solomon Islands, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Timor-Leste, Tonga, Trinidad and Tobago, Tuvalu, and Vanuatu. Observer members include: American Samoa, the Netherlands Antilles, Guam, the U.S. Virgin Islands, and Puerto Rico.

**ALTERNATIVE ENERGY.** *See* RENEWABLE ENERGY.

**ALTERNATIVE LISTE OSTERREICHS (ALO).** *See* AUSTRIA.

**AMAZON.** The Amazon is the world’s largest rainforest and richest biological area. The Amazon River Basin includes parts of **Brazil**, Bolivia, Colombia, Ecuador, Guyana, Peru, and Suriname. Rapid deforestation has occurred as a result of swidden agriculture (the cutting and burning of plots of forest for subsistence-scale cultivation), agribusinesses (cattle ranching, commer-



cial agriculture), logging (legal and illegal), infrastructure development, and deliberate burning. The human rights advocate and trade unionist **Chico Mendes** attracted early attention to the destructive pressures on the Amazon rainforests and advocated protecting peasants' and indigenous peoples' rights. Decades of infrastructure development and harmful agricultural, land, and colonization policies have taken a heavy toll on the forests and their native inhabitants. Efforts aimed at protecting the forests, preventing further destruction and deforestation, and promoting **sustainable development** continue to galvanize and mobilize the green movement today. Amazon conservation is a priority area for **REDD+** initiatives (Reducing Emissions from Deforestation and Forest Degradation), with **Norway** being a leading sponsor. The Amazon Fund, which is engaged in sustainable forest management and environmental control, monitoring, and inspection, is eligible for REDD+ funding.

Due to its ecological importance, Amazon rainforest protection and justice for the indigenous peoples of the region are of major concern to many green groups, including the Amazon Alliance, Amazon Watch, and the **Rainforest Action Network (RAN)**.

**ANIMAL RIGHTS.** Green political parties and groups have usually taken a far stronger position than traditional political organizations and interest groups on issues related to the humane treatment of animals; protection of wildlife; opposition to intensive animal husbandry and animal experimentation; the use of animal products, especially when it places an entire species under the threat of extinction; and opposition to hunting animals for recreational purposes. The movement has also targeted the inhumane treatment of animals on factory farms and has encouraged vegetarianism and reducing meat consumption.

**Deep ecology** proponents argue that animals have moral rights. Tom Regan's *The Case for Animal Rights* is a seminal work in the defense of animal rights. Regan focuses on mammals aged one year or more that have developed perception, memory, desire, belief, self-consciousness, and a sense of the future before he elaborates on why some animals have basic moral rights, which he distinguishes from acquired moral rights (in other words, rights that are procured by law, by voluntary action on the part of individuals, and by virtue of one's position in institutional arrangements). Although large parts of the green movement have rejected or only partially understood these efforts to argue for the basic moral rights of animals, the issue has been a significant feature of campaigns to change perceptions about the relationship between human beings and nature. *See also* VEGETARIANISM.

**ANTARCTICA.** The frigid climate of this continent has rendered it inaccessible to humans and ensured the preservation of a pure environment. In 1959, the 12 countries that at the time were active in Antarctica signed the Antarctic Treaty with the view of using Antarctica for only peaceful purposes, mainly scientific research, and of excluding attempts to undertake nuclear tests or the disposal of radioactive materials there. Since then, 42 other countries have acceded to the treaty. In 1991, with concerns about growing interest in exploiting the territory, the Environmental Protocol to the Antarctic Treaty (the Madrid Protocol) was formulated. The Madrid Protocol reversed a 1988 decision by the signatories of the Antarctic Treaty to permit exploration for mineral resources. The Madrid Protocol entered into force in 1998. It prohibits all activities related to Antarctic mineral resources, except for scientific research. This prohibition on mineral resource activities can only be modified by unanimous agreement of all Consultative Parties to the Antarctic Treaty and cannot be removed until a binding legal regime on these activities is in force. Nongovernmental organizations (NGOs) and various green parties played an important role in campaigning for the preservation of Antarctica against efforts to exploit its natural resources (including oil) that could have a devastating effect on wildlife in the region.

**ANTHROPOCENE.** Human activities are altering basic earth systems, including the atmospheric, geological, hydrological, and biospheric systems, in dramatic ways. To capture this impact, researchers have begun to speak about this as the “age of the anthropocene.” Although geologists refer to the approximately 12,000 years since the last glacial period as the Holocene, human activities are altering the planet with a magnitude previously seen only as a result of natural calamities, such as with the extinction of the dinosaurs. Therefore, the term *anthropocene* was coined. Global deforestation, climate change, and the mass destruction of biodiversity as a result of human economic and social activities threaten the long-term health of earth systems.

**ANTI-GLOBALIZATION MOVEMENT.** The rise of the multinational corporation, globalization of culture, loss of local identity, and inequalities that have persisted (and in some cases worsened) among and within countries as international trade and investment have expanded have spawned an anti-globalization movement. The anti-globalization movement is opposed to the neoliberal economic agenda of the West (the **United States**, Europe, and East Asia). This movement has been involved in protests against the World Trade Organization, the World Bank, the International Monetary Fund, the G8, the World Economic Forum, and the regional free-trade blocs (e.g., the European Union [EU], the Free Trade Area of the Americas) and on issues

such as **genetically modified organisms (GMOs)**, child-labor exploitation, and pollution transfer from rich to poor countries. Huge anti-globalization demonstrations have been held. Early examples include protests against the World Trade Organization meeting in Seattle in 1999; the International Monetary Fund (IMF)–World Bank meetings in Washington, DC, and Prague in 2000; and the G8 summit in Genoa, **Italy**, in 2001. The anti-globalization movement has taken on specific industries, such as global agribusiness. Activists such as **Vandana Shiva** argue that GMOs threaten the future of traditional crops and seed varieties, and that while global corporations may benefit from the sale of GMO crops, local communities often suffer. French activist José Bové used direct action techniques to protest GMOs (such as the dismantling of a McDonald's in southern **France** and the destruction of GMO crops). In 2011, the Occupy Wall Street movement, protesting global inequality, rapidly spread across the globe. Despite the protests that took place in 82 countries, the movement fizzled and had only limited political impact.

The anti-globalization movement sees the spread of global capitalism as a threat to global democracy because of its empowerment of corporations at the expense of people and their ability to make choices about their own lives and communities. It also opposes the loss of local cultures that has accompanied the spread of industrial and corporate structures and argues that while globalization has helped to make some corporations, individuals, and countries wealthy, it has left many communities and countries impoverished.

Cofounder of Occupy Wall Street Micah White argues in his book *The End of Protest* that, despite their mobilization potential, demonstrations are failing to bring about change. Part of the problem, he argues, is that protest has become an industry. He urges revolution through participation in the democratic system instead: through voting, becoming candidates, and legislative change.

**ANTI-NUCLEAR PROTESTS.** The conflict over nuclear power was a key factor in the advance of the green movement in the 1970s and the formation of green parties in Europe in the 1980s. Anti-nuclear protests normally involved small communities concerned about the effects of radiation on local produce. In the **United Kingdom**, there was a strong association between protests by the **Campaign for Nuclear Disarmament (CND)** against nuclear weapons in the 1950s and 1960s and the subsequent protests against nuclear power generation for civilian purposes.

In the **Federal Republic of Germany**, the mobilization of the population in several small communities against nuclear power plant construction rapidly expanded into a national protest movement. The 1975 protests in Wyhl were not only anti-nuclear, but they were also an expression of frustration in the collusion between the state government of Baden-Württemberg and in-



**Citizens protesting nuclear energy in Braunschweig after the Fukushima nuclear accident. Courtesy of Paul Koch.**

dustrial interests, the deployment of the police to solve political problems, and the intransigence of the dominant political parties. Similar protests, on a much larger scale, occurred in **Brokdorf** (1976), Grohnde (1977), Gorleben (1978), Hannover (1979), and Bonn (1979). Huge demonstrations also occurred at Kaiseraugst in **Switzerland** and at Creys-Malville in France (July 1977). In the **United States**, the Clamshell Alliance engaged in civil disobedience to prevent the construction of the Seabrook nuclear power plant in New Hampshire. Over 1,400 people were arrested in the 1976 protest. In May 1979, approximately 75,000 people gathered in Washington, DC, to take part in a demonstration against nuclear power.

Protests against nuclear power were linked to the rise of new political movements and parties, especially in Europe. In West Germany, **citizens' initiatives** focused increasingly on this issue and were brought together under an umbrella organization, the Bundesverband Bürgerinitiativen Umweltschutz (Federal Association of Citizens' Initiatives for Environmental Protection), which was founded in 1972. In October 1979, over 1,000 environmentalists met in Offenbach to discuss the possibility of establishing a new political organization that later became known as Die Grünen. The Organization for Information on Nuclear Power was formed in **Denmark** in

1974, the Initiative against Nuclear Power Plants arose in the **Netherlands** in 1973, and Action against Nuclear Power was founded in **Austria** in 1974. The Swedish Miljöverbund, formed in 1976, paved the way for the Miljöpartiet de Gröna, a green party founded in 1981. In **Australia**, the Australian Labor Party Conference decision in 1984 to allow the opening of a uranium mine led to the formation of the Nuclear Disarmament Party (NDP). Within six months, the NDP had 8,000 members and attracted 643,000 (7 percent) first-preference votes in elections to the Senate.

There have been a series of major nuclear accidents, each of which has put into question industry claims about safety. In March 1978, a cooling malfunction that led to the partial meltdown of one of the reactors at the **Three Mile Island** plant in Harrisburg, Pennsylvania, intensified nuclear protests in Europe and the United States. Human error resulted in the explosions and meltdowns at the **Chernobyl** nuclear power plant near Kiev, **Ukraine**, then part of the Soviet Union. It is estimated that 30 people died very soon after the explosion, several hundred others had to be treated for the severe effects of radiation, and over 130,000 inhabitants had to be evacuated from the region. The Chernobyl nuclear accident tipped the nuclear debate in favor of those opposing nuclear power in several European countries, including Austria, Denmark, Germany, Italy, and Sweden. The flooding of the Fukushima Daiichi nuclear power plant (after the 11 March 2011 Tohoku earthquake and tsunami) and subsequent hydrogen explosions and core meltdowns prompted countries to review their nuclear safety standards, to reduce their nuclear power development plans, and in some cases even to give up on nuclear energy.

After news of the **Fukushima nuclear disaster** spread across the world, the anti-nuclear movement revived worldwide. The largest protests in decades were held in Japan. In Germany, huge rallies were organized in major cities such as Berlin, Hamburg, Munich, and Cologne. Different national contexts have influenced the ability of anti-nuclear activists to bring about change.

Anti-nuclear movements have also addressed nuclear-waste management. Protests against the Yucca Mountain facility in the United States and Asse, Morsleben, and Gorleben in Germany are examples of the concerns surrounding the long-term management of highly radioactive waste.

Movements against nuclear weapons also remain active. The **International Campaign to Abolish Nuclear Weapons (ICAN)** was launched in Vienna, Austria, in 2007. A coalition of 468 nongovernmental organizations in 101 countries, it promoted the United Nations nuclear-weapon-ban treaty, which was adopted in 2017. ICAN won the Nobel Peace Prize in 2017 for its efforts at forging the nuclear-weapon-ban treaty. *See also* BROKDORF;

CHERNOBYL; ENERGIEWENDE (ENERGY TRANSITION); FUKUSHIMA NUCLEAR DISASTER, JAPAN; GERMANY, FEDERAL REPUBLIC OF.

**ARCTIC.** Due to global warming and the polar-amplification phenomenon, the temperature in the Arctic has increased even more rapidly than the global average. The result has been a dramatic decrease in Arctic sea ice and Northern Hemisphere spring snow cover. The Arctic is likely to be ice free in the summer in the near future. The implications for the region's wildlife are severe.

The Arctic region has large volumes of untapped oil and gas. Due to ice melt and technological advancement, it has become easier to extract fossil fuels and other resources in the region. Trans-Arctic shipping routes are gaining global attention. Environmentalists are opposed to drilling for fossil fuels in the Arctic because of the sensitivity of ecological systems there and the high risk of spills and environmental destruction in this harsh environment. Greenpeace and many other environmental organizations have protested against explorative drilling in the region. While **Canada** and the **United States** agreed on an offshore drilling ban during the Obama administration, the Trump administration has reversed this decision. **Russia** has been actively drilling in the region, and **Norway** has also engaged in explorative drilling in the Barents Sea.

The Arctic states formed an intergovernmental forum, the Arctic Council, to promote cooperation for the environment and sustainable development in the region. The members are Canada, **Denmark**, **Finland**, Iceland, Norway, the Russian Federation, **Sweden**, and the United States. Arctic indigenous peoples' organizations participate as permanent participants of the council as well. The body remains politically weak, however, due to its limited mandate. Whether the green movement will be able to stimulate sufficient support to stop resource extraction in the Arctic remains to be seen.

**ASIA-PACIFIC GREENS FEDERATION.** In May 2000, representatives of 12 green parties and political movements met in Brisbane, **Australia**, for the first Asia Pacific Green Politics Workshop. A global Greens Congress in Canberra followed this in 2001. Building on this momentum, the Japanese green activist group the Rainbow and Greens hosted an international meeting in Kyoto, **Japan**, in 2005 to formally launch the Asia-Pacific Green Network. The idea was to facilitate international exchange among greens in the Asia Pacific region. Representatives of established green parties and green groups attended the meeting. An Asia Pacific Young Greens Network was also launched at the Kyoto meeting. The Asia-Pacific Greens Network con-

vened congresses in 2010 in Taipei, **Taiwan**, and in 2015, Wellington, **New Zealand**. After adopting a constitution at Wellington Congress, the name changed to Asia-Pacific Greens Federation.

**ASSOCIATION OF SOUTHEAST ASIAN NATIONS (ASEAN)**. Initiated in 1967 on the model of the European Economic Community, there are now 10 member countries of ASEAN: Brunei Darussalam, **Cambodia**, **Indonesia**, **Laos**, **Malaysia**, Myanmar, the Philippines, Singapore, **Thailand**, and **Vietnam**. As a result of ASEAN, cooperation in Southeast Asia is moving beyond the bilateral to the multilateral level. The initial goal of ASEAN was to promote peace and stability among historic rivals. Slowly, environmental concerns have also crept onto the agenda. The United Nations played an important stimulating role in this process. The **United Nations Environment Programme (UNEP)** pushed the establishment of the Sub-Regional Environmental Programme in Southeast Asia in 1977.

In the 1980s, ASEAN issued several environmental declarations calling for cooperation on raising environmental awareness in the region; the creation of a list of sites in the region that should be recognized as special heritage parks and reserves; and regional cooperation in protection of the seas and tropical forests and addressing land-based pollution, air pollution, and urban pollution.

ASEAN's environmental activities picked up noticeably in the 1990s, especially in response to the haze problems caused by wide-scale forest fires in Indonesia, which have caused severe air pollution throughout large parts of Southeast Asia. The formation of the Agreement on Transboundary Haze Pollution may be an important step in moving ASEAN toward the acceptance of legally binding international environmental agreements.

Although efforts to consolidate internal cooperation on environmental issues are still in progress, ASEAN has been enhancing environmental cooperation with its strategic external partners. The first ASEAN+3 (**Japan**, the **People's Republic of China**, and the **Republic of Korea**) environment ministers' meeting was held in November 2002. Following the Singapore Declaration on Climate Change, Energy and the Environment issued at the East Asia Summit in 2007, ASEAN has regularly participated in the East Asia Summit Environment Ministers Meeting. While seeking extensive environmental collaboration with its partners, ASEAN also pursues cooperation with China (China-ASEAN Strategy on Environmental Protection Cooperation of 2009) and the European Union (EU) (SUSTAIN EU-ASEAN).

Recognizing the importance of environmental cooperation in the region, ASEAN launched the Blueprint for the ASEAN Socio-Cultural Community (ASCC Blueprint 2009–2015), which set 10 priority areas for environmental sustainability. This was followed by the ASEAN Community Vision 2025,

which calls for the creation of a sustainable and resilient community with enhanced capacity to adapt and respond to economic vulnerabilities, disasters, climate change, and emerging threats.

**AUDUBON SOCIETY.** *See* NATIONAL AUDUBON SOCIETY.

**AUSTRALIA.** The origins of green political organizations in Australia can be traced to the appearance in the 1970s of community-group opposition to specific developments. In New South Wales, workers from the militant Builders Labourers Federation joined in protests against plans for development and the destruction of parklands, established communities, and historical buildings. The unions imposed work bans on projects they considered to be environmentally hazardous. Forty-two bans were applied over a four-year period (from 1971 to 1975) and blocked development projects valued at hundreds of millions of dollars.

In Tasmania, the **United Tasmania Group (UTG)**, which was created to oppose a dam on Lake Pedder, was among the first green political organizations in the world to compete in state elections. Although the protest groups were ultimately unsuccessful in preserving Lake Pedder, they precipitated the growth of a movement that eventually influenced the national agenda on environmental policies.

The program of the UTG contained some of the classic tenets of green political organizations, including a critique of the “misuse of power” as well as a focus on social justice and on participatory democracy. The Tasmanian **Wilderness Society** (later renamed the “Wilderness Society”), which was formed in 1976, helped get the environment onto the national political agenda, for example, with its campaign between 1979 and 1983 to prevent the creation of the **Franklin Dam**. Both the Wilderness Society (through its mobilization of activists) and the **Australian Conservation Foundation (ACF)** (through its adoption of a more radical stance) were to influence environmental policies, first in the Australian Labour Party (ALP) and later in other established parties, notably the Australian Democrats.

In 1989, five green independent candidates, who polled 17 percent of the vote, were elected to the Tasmanian House of Assembly. Independents held the balance of power and signed a momentous “accord” with the ALP. The greens agreed to support an ALP government in exchange for some major environmental policy concessions, notably the extension of wilderness and forest areas covered by **World Heritage** protection and **national park** status.

The Australian Greens formed in 1992 as a confederation of the eight separate state and territory Greens. After the 2016 federal elections, the Australian Greens had 9 senators and 1 representative in the lower house and 23



representatives in state and territory parliaments. The party's main issues are dealing with climate change through the development of **renewable energy**, fair treatment of migrants, and a fair tax system. *See also* DIRECT DEMOCRACY.

**AUSTRALIAN CONSERVATION FOUNDATION (ACF).** Formed in 1965, the ACF was the first truly national environmental organization in **Australia**. From a modest membership of about 1,000 in 1967, membership in the association rose to about half a million in the mid-2010s. The ACF counts among its success stories the establishment of numerous **national parks**, the prevention of drilling and mining in natural areas (including the Great Barrier Reef and **Antarctica**), stopping plans to dam rivers, winning new support for the National Heritage Trust, and the passage of legislation preventing nuclear-waste dumping. They expose polluting companies, tackle fossil fuel subsidies, advocate for climate change, and call for a nuclear-free future. Like the **Wilderness Society**, the ACF has played an important part in endorsing candidates supportive of conservation causes. They distribute an environmental scorecard that ranks parties by issue prior to elections.

**AUSTRIA.** The emergence of the green movement in Austria is similar to developments in other countries as regards the connection with campaigns by social movements and by **citizens' initiatives**. Opponents succeeded in blocking a nuclear power plant (whose construction was nearly complete) from starting operations in Zwentendorf near Vienna. In a referendum conducted in 1978, 50.5 percent of voters opposed nuclear energy. In 1984, the green movement succeeded in preventing the building of a hydroelectric power plant at Hainburg on the Danube, leading to the formation of a consolidated green party, the Grüne Alternative (Green Alternative), and its first-time entry into Parliament in 1986.

The United Greens of Austria (Vereinte Grüne Österreichs, VGÖ), a moderate and reformist green party, was formed in 1982. It gained its main basis of support from campaigns against nuclear power. The Alternative List of Austria (Alternative Liste Österreichs, ALÖ), a more radical green party, was also formed in 1982. The party campaigned for peace and nuclear disarmament, and on issues directly affecting less developed countries.

Following a referendum on nuclear power in 1978, green groups did not form a political party in time for the 1979 national elections. When they competed in the 1983 national elections, VGÖ and ALÖ only attracted 1.9 and 1.4 percent of the vote, respectively. By contrast, in 1986, by presenting a united list, the Green Alternative (Die Grüne Alternative), the two parties gained 4.8 percent of the vote in national elections and eight seats in the parliament. In that year, one of the leading figures in the green movement,

Freda Meissner-Blau, competed in the presidential elections. Although she received only 5.5 percent of the vote, this was sufficient to force a second-round contest between candidates for the conservative People's Party and the Socialist Party.

The ALÖ had close links to new social movements and emphasized participation by activists. The VGÖ was a much more conservative organization, and much of its program, apart from environmental questions, resembled that of traditional political organizations.

There was initially a clear contrast between the respective programs and policies of the VGÖ and ALÖ. The VGÖ concentrated on the individual citizen, support for the family, and civil liberties. It had an anti-statist program, emphasizing deregulation and privatization in economic affairs and a less interventionist role in social policy. By contrast, the ALÖ favored statutory intervention in all these areas, including such measures as nationalization and regulation of incomes. The ALÖ favored peace and nuclear disarmament. Die Grüne Alternative took up some of the concerns expressed by the VGÖ, though it also developed ALÖ policies on the economy more fully, reforming the political system, health and social security, peace, and many other questions.

In 1993, the united parties adopted the official name “Die Grünen–Die Grüne Alternative.” They came, however, to simply be known as Die Grünen. At one time, they were one of the strongest green parties in Europe. Die Grünen opposed Austria's application for membership in the European Union (EU). Following the country's accession to the European Union in 1995 after a large pro-EU majority in the referendum was organized, Die Grünen has become a pro-European party committed to reforming the EU from within. During the 1990s and into the 2000s, it opposed the Temelin Nuclear Power plant in the Czech Republic.

Running on a platform that included a new energy policy, green job investments, education, gender equity, organic agriculture, social justice, and a global foreign policy, Die Grünen became Austria's third-largest political party for the first time after winning 11.05 percent of the vote (21 MPs, 12 of them women) in the October 2006 parliamentary election. Die Grünen played a central role in pushing for in-depth investigations into financial scandals that came to light both at the national and the regional levels. The establishment of a parliamentary inquiry committee in 2014—to shed light on a major scandal surrounding the bailout and nationalization of the “Hypo Alpe Adria” Bank—was a result of years of political pressure by Die Grünen. In the 2013 national election, Die Grünen achieved its best national election result with 12.42 percent of the vote and 24 seats. It then achieved a global first when Alexander Van der Bellen, former leader of the Austrian Die Grünen–Die Grüne Alternative ran as an independent and won the Austrian presidential election. In the 2017 national legislative elections, however, the

party's performance was calamitous. Winning only 3.8 percent of the vote, they failed to return to Parliament. In a time of right-wing populism and anti-immigrant sentiment, the inclusive and progressive views of the party did not resonate with the broader public.

In local and regional elections during the 2000s, Die Grünen performed strongly, an important achievement in Austria's federal political system, where spatial planning, nature and landscape conservation, and education are competences of the states (Bundesländer). After the 2006 regional elections in Carinthia, Die Grünen was represented in all nine regional parliaments, and in 2014 it was a partner in coalition governments in six out of nine Bundesländer. Similar to developments at the federal level, however, in the four regions holding elections after the 2017 federal elections, the party suffered a drop in support, in some cases a sharp one. The share of the votes plummeted from 12.1 to 3.1 percent in Kärnten and from 20.2 to 9.3 percent in Salzburg. More modest drops occurred in Niederösterreich and Tirol. The party took some solace in May 2017, when Georg Willi of Die Grünen won the mayoral election in Innsbruck.

Die Grünen's electoral performance in **European Parliament** elections shows a relatively stable pattern. The party won two out of Austria's 19 seats in 1999 (9.29 percent), 2004 (12.89 percent of the vote), and 2009 (9.96 percent). In 2014, the Greens won an additional seat (three out of 18 seats) and 14.52 percent of the vote. In the 2019 election, however, the party only managed to get 2 seats (14.1 percent of the vote).

The green movement is also represented by NGOs. Ökobüro, which formed in 1993, is an alliance of 16 NGOs. They include **Greenpeace**, **WWF**, **Friends of the Earth**, and Umwelt-Forum, a forum of Austrian scientists for environmental protection. Ökobüro's main vision is a society in which people treat nature and the environment with respect and where political action is based on research findings.

**AVAAZ.** A global web movement launched in 2007, Avaaz addresses social, political, and environmental issues. Priorities are determined by web polling. As of May 2018, Avaaz claims over 47 million members worldwide. Making use of online petitions, sending emails, fundraising for media campaigns and direct actions, and organizing protests, Avaaz sees itself as a new form of social movement in an Internet age and focuses on "tipping-point moments of crisis and opportunity." Avaaz spearheaded climate marches in major cities around the world before the 2015 Paris climate negotiations and gathered over a million signatures promoting the creation of massive marine reserves.

**AZERBAIJAN.** Azerbaijan is one of the oldest oil-producing countries in the world. In the course of over 160 years of oil production, the environment has suffered serious damage. The lack of environmental awareness and the weakness of the green movement in Azerbaijan are linked to the legacy of the Soviet Union, where environmental issues were not a political priority. In November 1988, the first large-scale environmental demonstration took place in the capital, Baku, against the destruction of the 300-year-old Topkhana forest near the town of Shusha.

After independence on 18 October 1991, Azerbaijan found itself in a desperate economic situation. Over one million internally displaced people and refugees linked to the war with Armenia over the Nagorno-Karabakh region poured into Azerbaijan. After the ceasefire agreement in May 1994, the economy stabilized. In the meantime, various important environmental laws were adopted: the Law on Environmental Protection and Utilization of Natural Resources was introduced in 1992 and the first National Environmental Action Plan was adopted in 1997. The Ministry for Ecology and Natural Resources was the main implementing body.

Due to its geographical location and climate, Azerbaijan has favorable conditions for the use of renewable energy. Historically, wind energy was used on individual farms for irrigation purposes. The State Agency on Alternative and Renewable Energy Sources, set up in 2009, conducts projects on renewable energy. In 2011, Azerbaijan set a target of having 20 percent of its electricity from renewable sources by 2020.

Some of the environmental associations and NGOs active in Azerbaijan are Ecological Society “Ruzgar,” Azerbaijan Green Movement, Azerbaijan Society for the Protection of Animals, EcoSphere Social-Ecological Center, Nature Friends Youth Organization, IDEA (International Dialogue for Environmental Action), and Ecoenergy Academy. In general, environmental actors are weak; their work is usually limited to research and raising public awareness.

# B

**BAHRO, RUDOLF (1935–1997).** Following his exile from the **German Democratic Republic** (East Germany), Rudolf Bahro, an intellectual and critic of the communist regime, became a leading figure in the formation of Die Grünen in the **Federal Republic of Germany** (West Germany). At first he espoused the possibility of combining socialism with environmental concerns. However, he rapidly became disillusioned, first with socialism and then with the pragmatic reformers, or realists, in Die Grünen. Bahro increasingly articulated the position of fundamentalists within the party, before promoting **spirituality**. He left Die Grünen in 1985 in protest to the compromises they were making over issues such as animal experimentation. His involvement in the movement demonstrated the possibilities for dramatic shifts in perceptions of the relationship between different ideologies (including socialism, capitalism, and environmentalism) and the importance of notions of culture and spirituality in this process. There are parallels between Bahro's focus on these notions and the idea of a shift in values from materialism to **postmaterialism**.

**BANGLADESH.** Bangladesh is the world's eighth most populous state with over 166 million inhabitants in 2018. The country faces wide-scale poverty, income inequality, a burgeoning population, disease, lack of resources, environmental destruction, and recurring floods. As the population of Bangladesh soars, so does the amount of poverty: over half of the population is impoverished and illiterate. Despite or because of Bangladesh's poverty, environmental movements have started to form. In 1997, a citizens' forum, known as the Poribesh Rakkha Shopoth (POROSH), formed to address the pollution problems of Dhaka, the capital. The following year, nonresident Bangladeshis set up the Bangladesh Environment Network (BEN). In 2000, BEN joined with POROSH to host the International Conference on Bangladesh Environment in Dhaka. The conference discussed major environmental issues and drew widespread media attention. A merger of BEN and POROSH created Bangladesh Poribesh Andolon (BAPA) (Bangladesh Environment Movement), the beginning of the civic environmental movement. In 2014,

the Green Party of Bangladesh was launched and a party constitution created. Its objectives include the environment, health and safety, ecological wisdom, zero corruption, and gender equity, among other issues.

The constructing of coal-fired plants has been one of the salient environmental concerns in the country. In 2016, thousands of Bangladeshis marched for 155 miles against the construction of two coal plants—Rampal and Orion—to be built near the Sundarbans forest, the world’s largest mangrove forest and a UNESCO **World Heritage** site located on the border of Bangladesh and **India**. Rampal and Orion are just two of a dozen planned coal plants.

**BASEL ACTION NETWORK (BAN).** With its name derived from the 1989 United Nations **Basel Convention**, the Basel Action Network seeks to end toxic trade for global environmental health.

### **BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL.**

The Basel Convention is an international treaty drafted in 1989 in response to public outcries against the indiscriminate dumping of hazardous waste. The convention went into force in 1992. It intends to reduce the movement of hazardous waste between nations and to prevent the “trade” in waste that resulted in developed countries’ dumping hazardous waste in developing countries.

Hazardous waste, if managed improperly, can cause severe health problems and destroy water and land for many years. The convention covers toxic, poisonous, explosive, corrosive, flammable, and infectious hazardous waste. Under the convention, the movement of hazardous waste can take place only with written notification by the exporting state to the importing state and the approval of the importing state. Also required is a movement document for every shipment from the point where the transboundary movement began to the point of disposal.

The agreement has been used by NGOs to stop questionable practices. In 2006, **Greenpeace** International, for example, demanded that a naval aircraft carrier, the *Clemenceau*, which was being towed to **India** for scrapping, return to **France** (a signatory to the Basel Convention), due to the hazardous materials on board, including 500 tons of asbestos.

Transboundary movement is allowed if the exporting state does not have the ability to dispose of the hazardous waste in an environmentally sound manner. Each party to the convention must fill out an annual questionnaire about the specific country’s generation, and the export and import, of hazardous waste.

The convention focuses on the “environmentally sound management” of hazardous waste and the reduction of hazardous waste generation. The convention also tries to lower demand for products that result in hazardous waste.

In order to help countries implement the Basel Convention, Regional Centers for Training and Technology Transfer have been established in developing countries. These centers provide guidance on technological and enforcement issues, and they encourage cleaner production technologies and environmentally sound waste management practices.

**BASIC INCOME.** The main idea behind the basic income concept is to provide all citizens (or residents) of a country an unconditional sum of money from the government regardless of other income sources. Proponents argue that providing a basic income will contribute to social stability and reduce inequality problems. Opponents argue that it would become a disincentive for finding employment. The arguments are similar to those found in the **guaranteed minimum income** discussion.

A discussion on providing a basic income began in the 1980s in Europe, in particular in **Denmark, Germany, Great Britain, and France. Switzerland** held a referendum regarding basic income in 2016, but it was rejected. There have been several pilot basic-income programs implemented around the world. In Alaska, residents officially registered for more than six months in the state receive universal dividends from oil resources every year. In 2017, Helsinki (**Finland**), Utrecht (**the Netherlands**), and Barcelona (**Spain**) implemented pilot basic-income programs for a select number of individuals. Finland, however, chose to abandon the program due to cost.

**BASIC INCOME EARTH NETWORK (BIEN).** Established in 1986, BIEN links individuals and groups with an interest in forwarding the idea of a basic income. It does this through educational initiatives such as conferences.

**BELGIUM.** Belgium is culturally and linguistically divided, and this has influenced the development of green movements in the country. The two largest linguistic groups are the French speakers living in the southern region of Wallonia and the Dutch (Flemish) speakers of Flanders in the north. Political parties tend to be organized around regional identities and issues. This is the case with the two green parties: Ecolo in the French-speaking region of Walloon and Groen (formerly Agalev) in the Flemish-speaking region.

In the early 1970s, a variety of groups contested elections either on a platform promoting **direct democracy**, including a group called *Democratie Nouvelle* (New Democracy), or combining democratic and ecological principles, such as *Combat pour l'Ecologie et l'Autogestion*. By the late 1970s, these groups and others such as *Ecopol* and *Ecolog* (which partly represented segments of the **Friends of the Earth**) had laid the foundations for *Ecolo*, a French-speaking political party in Wallonia based on green politics. The immediate spur to its creation was the success of a loose association called *EuropeEcologie* in the 1979 elections to the **European Parliament**. *EuropeEcologie* did better than any other green party, attracting 5.1 percent of votes cast by the Walloons.

In 1981, *Ecolo* succeeded in gaining two seats in the Belgian Chamber of Representatives. Since then, the party's fortunes have varied. The party achieved a peak of 7.4 percent of the overall vote and 11 of 150 seats in 1999 and a low of 3.3 percent of the overall vote in 2014, giving the party 6 seats. The party brings together ecological entrepreneurs—individuals who seek to reduce electronic waste, aid migrants to the country, and protect bee populations.

*Agalev* (“for an alternative way of life”) was *Ecolo*'s counterpart in the Flemish-speaking regions of Belgium. Formed in 1979, *Agalev* changed its name to *Groen!* in 2003. The name *Agalev* derived from a movement called *Anders gaan leven* (“for an alternative way of life”). The movement, which questioned consumerism, was initiated by Luc Versteyleen, a Jesuit priest and teacher; he, however, did not join the party.

In 1979, *Agalev* presented lists of candidates at the first elections to the **European Parliament** and obtained 2.3 percent of votes in Flanders. In 1981, with 3.9 percent of the votes, it gained two seats in the lower house of the Belgian Parliament and a seat in the Senate. Success in local elections created a new momentum. In March 1982, *Agalev* detached itself from *Anders gaan leven* and formally became a political party. Throughout the 1980s, it steadily increased its support base, reaching 12.2 percent of the vote in the 1989 European elections and 7.8 percent in Flanders in the national elections. In the early 1990s, *Agalev* agreed to give its support to a constitutional amendment creating a federal system in Belgium in exchange for agreement on a tax on bottles, Europe's first ecotax.

Just prior to the 1999 election, Belgium had been hit by a food-contamination crisis when high levels of dioxin were found in chickens raised in the country. The green parties, with their focus on sustainable living, appealed to voters. From 1999 to 2003, both green parties—*Ecolo* and *Agalev*—joined the purple-green coalition government (liberals, socialists, and greens) headed by Prime Minister Guy Verhofstadt. *Ecolo*'s Isabelle Durant became deputy prime minister for mobility and transportation and Olivier Deleuze secretary of state for energy and sustainable development. *Agalev*'s Magda



Aelvoet became minister for consumer affairs, public health, and environment, and Eddy Boutmans became secretary of state for development cooperation. During their time in government, Agalev and Ecolo called for a phase-out of **nuclear energy**, antidiscrimination legislation, and legislation recognizing gay marriages.

Both Agalev and Ecolo found the compromise required of coalition governments problematic. Magda Aelvoet resigned her post in opposition to a deal to export arms to Nepal, which was then engaged in a civil war. Ecolo's uncompromising positions on policy matters, such as on the question of night flights over Brussels (which led to the resignation of the Ecolo ministers of energy and transport when no compromise could be reached) and their opposition to tobacco advertising, which led to the cancelation of the Belgian Grand Prix, strained the coalition. Agalev distanced itself from Ecolo, but in the 2003 parliamentary elections, the party took a heavy hit. It fell to 2.5 percent of the vote, insufficient to enter Parliament (a 5 percent hurdle, which had been supported by Agalev, was introduced just prior to the election). In an effort to revitalize the party after its poor showing, Agalev changed its name to Groen! In January 2012 the party removed the exclamation mark from the end of its name, and announced the new party slogan "werkt voor iedereen" (works for all) to highlight its desire to look after the needs of the society as a whole. After the 2014 election, the party had six seats in Parliament. Groen won one seat in the 2019 **European Parliament** election.

**BENIN.** Environmental nongovernmental organizations (NGOs), women's movements, and youth groups spawned the formation of Benin's Green Party (Les Verts) in 1995. In 2003, the Green Party as part of the Star Alliance, an oppositional political party comprising the Builders and Managers of Freedom and Democracy, the Union for Democracy and National Solidarity, and the Greens, sent three delegates to Parliament. Although the Greens had no elected members in the National Assembly or in the 77 local councils, membership was at about 500 people in 2011. The Greens launched a youth movement in 2007 following an international youth forum in Cotonou, which brought together countries including **Nigeria**, Burkina Faso, Mali, Togo, Ghana, and the Ivory Coast. The youth movement focuses on a specific environmental theme each year. In 2017, the NGO Workandsee Vankan: Agir Pour Changer established a green brigade called "green soldier." It brings together volunteers who address environmental problems and seek to educate others of the importance of protecting the environment.

**BHOPAL.** This city, the capital of Madhya Pradesh, **India**, will be remembered as the setting for a catastrophe that began on 3 December 1984 following the release of poisonous gas, comprising mainly methyl isocyanate, from the Union Carbide pesticide plant located there. The official death toll reached 3,787, although activists claim that thousands more died. The hundreds of thousands of inhabitants of the area around the factory suffered extreme discomfort (including temporary blindness and burning lungs). After a lengthy court battle, victims were awarded US\$470 million in compensation in February 1989, a figure well below original demands. Decades after the accident, activists are still struggling to have the soil in the region cleaned up and to win compensation for victims.

**BIOCENTRISM.** Biocentrism developed as a reaction to the concept of human conquest of nature associated with the industrial revolution and scientific progress. It entails a focus on oneness with nature and on the dangers of human distance from and interference with the natural environment. The biocentric view of the world was given a significant boost in the 19th century both by romantic poets and writers and by scientific studies such as Charles Darwin's work on the evolution of animal species. *See also* BIOREGIONALISM.

**BIODIVERSITY.** Biological diversity, or biodiversity, refers to the variety of different species living on Earth and the natural patterns that their interaction causes. Scientists have identified over 1.5 million different bacteria, protists, fungi, and plant and animal species, with much uncertainty regarding the number of unidentified species. Estimates range widely from a few million to over a trillion. Concern over the preservation of biological diversity originated in the 19th century. Formal attempts to address the problem globally include the **United Nations Conference on the Human Environment (UNCHE)** (1972); the World Conservation Strategy launched by the **International Union for the Conservation of Nature (IUCN)**; the United Nations Educational, Scientific and Cultural Organization's (UNESCO) **Man and the Biosphere Programme**; the **Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)**; and the **Convention on Biological Diversity**. There are also many treaties aimed at protecting specific species and ecological regions.

In the 1980s, various groups of experts began raising the alarm about the threat to biological diversity from population pressures, expansion of modern agriculture, deforestation, development, pollution, and alien species. More recently, concerns about the impacts of **climate change** on biological diversity have started to gain attention. *The Global 2000 Report*, which was released in 1980, estimated that by the end of the 20th century, largely as a

result of the destruction of tropical rainforests, hundreds of thousands of plant and animal species would become extinct. The Millennium Ecosystem Assessment, conducted between 2001 and 2005, supported the conclusion of the *Global 2000 Report*. Human activity in meeting needs for food, water, timber, fibers, and fuel grew rapidly and resulted in the unprecedented loss of biodiversity over the latter half of the 20th century. In 2018, the UN-backed **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services** released a report that issued a chilling set of predictions on global biodiversity loss in the next decades as a result of land loss and climate change.

Environmentalists' concern about this loss is based in aesthetic, moral, and utilitarian considerations. The cure for many illnesses may ultimately be found in plants that face the threat of extinction. There are also concerns about how the loss of genetic resources narrows the range of possibilities for dealing with other problems, especially in agriculture, and about the destruction of rainforests without regard to the consequences for plant, animal, and human life. There is concern that climate change is accelerating biodiversity loss. *See also* BIOPROSPECTING; BIODIVERSITY HOTSPOTS.

**BIODIVERSITY HOTSPOTS.** In an effort to draw public and policy makers' attention to the importance of conserving the most biologically rich places on the planet, Norman Myers developed the concept of biodiversity hotspots, areas that are among the most biologically rich in the world and where conservation efforts could contribute enormously to species preservation. Expanding on Myers's work, **Conservation International** designated 35 regions worldwide, accounting for only 2.3 percent of global land surface, that are especially biodiverse and critical to maintaining global biodiversity.

**BIOPROSPECTING.** The search for medicinal and useful material substances in plants and animals is known as *bioprospecting*. Bioprospecting is controversial as most of the companies involved in it are located in developed countries, and much of it occurs in developing countries. Intellectual-property-rights issues have become entangled with bioprospecting as pharmaceutical and other companies often benefit from local indigenous knowledge when collecting plants and living organisms for research purposes.

Efforts to address these issues have been made with the establishment of the **Convention on Biological Diversity**. The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization was adopted in 2010 and entered into force in 2014. The protocol provides a legal framework for fair and equitable benefit sharing with indigenous and local communities for the use of genetic resources. Bioprospecting agreements, such as that between Merck and the National

Biodiversity Institute (INBIO) in **Costa Rica**, came with high hopes, but the long lead time for developing new drugs has dampened enthusiasm. Facing financial difficulties, INBIO transferred its biodiversity collection and land to the state in 2015.

**BIOREGIONALISM.** The vision of a decentralized society has been articulated in many different ways. The term *bioregionalism* is one such expression. It refers, in the words of Kirkpatrick Sale, to a society in which people live according to the rhythms of the land or the discrete territory defined by natural boundaries (flora, fauna, water, landforms, soils, and climate). Rather than shape the land, humans would adapt to it. This, it is argued, would accelerate the formation of different cultures, different systems of government, and a more balanced or steady-state economic and social system. The perceived advantages of a bioregionalist society include an increase in leisure time, proximity to nature, the development of communal bonds, and the acceptance of the world “as it is” and of people “as they are,” rather than a society characterized by fragmentation, change, and violence.

Contrary to the expectations of its proponents, the concept of bioregionalism has not been widely championed within the green movement. Still, some of the values that are said to be an integral part of bioregionalism have been significant in shaping aspects of its platforms, programs, and practices. *See also* BIOCENTRISM; “A BLUEPRINT FOR SURVIVAL”.

**BIOSPHERE CONFERENCE.** Assembled in Paris between 4 and 13 September 1968, the Intergovernmental Conference of Experts on the Scientific Basis for Rational Use and Conservation of the Biosphere was an initiative by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) to foster international debate among experts about the impact of human beings on the environment.

The themes broached at this conference anticipated and provided a firmer basis for the 1972 **United Nations Conference on the Human Environment (UNCHE)** held in Stockholm. The Biosphere Conference focused mainly on the potential contribution of natural scientists toward addressing issues such as air and water pollution and the destruction of forests.

The Biosphere Conference was among the first intergovernmental meetings to highlight the significance of environmental issues. It played an important part in voicing growing concerns about the scale of environmental destruction, focusing on the complex linkages between human activity and the environment, and raising awareness about the importance of collecting data on regional and international aspects of changes in the environment.

**BIOSPHERE RESERVES.** Areas of terrestrial and coastal ecosystems internationally recognized within the framework of UNESCO's **Man and the Biosphere Programme** (launched in 1971) are called "biosphere reserves." Biosphere reserves aim to demonstrate a balanced relationship between the ecosystems and human activity, promoting solutions that reconcile the conservation of natural resources and their sustainable use. These sites are considered to be living laboratories for testing innovative approaches for the integration of nature conservation, **sustainable development**, and education. The management of biosphere reserves assumes the involvement of local communities in decision-making processes.

Each biosphere reserve is part of the World Network of Biosphere Reserves, which facilitates the exchange of data, experience, and expertise. As of 2017, the World Network of Biosphere Reserves includes 669 biosphere reserves in 120 countries, including 20 transboundary sites.

**BIRDLIFE INTERNATIONAL.** A partnership linking over 120 national conservation organizations and 4,000 local organizations with a combined 10 million members and supporters working cooperatively around the globe for the protection of birds.

**"A BLUEPRINT FOR SURVIVAL".** In the early 1970s, a number of parallel concepts drew attention to the threats posed by environmental destruction. "A Blueprint for Survival" is an article published in 1972 by the editorial board of *The Ecologist* magazine, led by Edward Goldsmith. Like *The Limits to Growth* published by the **Club of Rome**, "A Blueprint for Survival" was written to startle people into action. It called for radical changes in lifestyles in order to ensure the survival of the planet. The main proposal was the creation of a new, decentralized social system. This would supposedly facilitate more participation in decision making and more cooperative attitudes than in a heterogeneous, centralized society and would lead to greater innovation both in agriculture and industry. More fulfilling personal relationships might also characterize small, self-regulating communities, and there would consequently be less emphasis on consumption. Other possible benefits of decentralization would include self-sufficiency and a reduction in the use of costly facilities such as large-scale sewage treatment plants. The authors prescribed policies of stable **population growth**, more efficient use of energy, and less reliance on pesticides and fertilizers.

**BOOKCHIN, MURRAY.** See SOCIAL ECOLOGY.

**BRAZIL.** Brazil is the world's fifth most populated country, with almost 210 million inhabitants in 2017. The opening of political space that accompanied Brazil's democratic transformation in 1985 was crucial to the emergence of the country's environmental movement. The freer flow of information and civil dissent allowed in the new political system enabled the explosion of environmentally oriented nongovernmental organizations (NGOs) onto the scene. These NGOs were largely local groups that sought to protect their environment from destructive and exploitive logging, damming, mining, and other development projects undertaken or supported by the Brazilian government, private corporations, foreign countries, and international institutions such as the World Bank. The country's pervasive poverty problems and pressure from the global capitalist market continue to exert tremendous pressure on Brazil's natural resources.

Brazil's green movement has strengthened substantially as the country's democracy has deepened. Aid from international NGOs has bolstered the efficacy of Brazil's environmental community, which still lacks resources and support. The foundation of the Gaucha Association for the Protection of the Natural Environment in 1971 marked the appearance of a social movement directly concerned about green issues in Brazil. The rise of a green movement was connected to diffuse protest actions over issues such as the rights of women and indigenous groups and, above all, the restrictions on freedom imposed by the military regime between 1968 and 1974. Many of the leaders of the Brazilian ecological movement were in exile in Europe during the 1970s and were influenced by European social movements. With the extremely rapid expansion in the size of cities and industrial development, the green movement concentrated on the defense of rainforests and soil erosion. The extent of environmental degradation has meant that many traditional organizations, notably trade unions and professional associations, have also articulated popular concerns about damage to the environment. Support for the green movement came largely from the middle classes, especially from the growing number of people living in cities and those with a university education and in white-collar occupations.

The military regime's relaxation of some of its control over political activity allowed environmentalists to contest elections. Beginning in 1982, members of the green movement started to be elected to state assemblies. With the ending of the military regime in 1985, several prominent ecologists, writers, actresses, and ex-exiles (including Fernando Gabeira) took the initiative to try to form a green party. They facilitated dialogue among environmental groups and in 1986 agreed to form a national green party (Partido Verde), though it was not formally registered until 1988. In the interim, it campaigned on a joint platform with the Workers' Party and received much coverage in the media, especially in relation to its "Speak Up Woman" feminist demonstration and its "Hug the Lake" human chain of 100,000

people around the polluted Rodrigo de Freitas Lake. In the November 1988 municipal elections, 20 candidates were successful in gaining seats in Rio de Janeiro, Sao Paulo, Santa Catarina, and Paraiba.

The party expanded into other areas, including the **Amazon**, where they had an ally (albeit not a party member) in **Chico Mendes**. Mendes took part in the the green party's "Save the Amazon" demonstration in 1988, but was killed one month later. Soon afterward, Partido Verde fielded Herbert Daniel, an LGBT civil rights activist suffering from AIDS, as a presidential candidate. Daniel quit the race after his campaign had the desired affect of raising media attention to the AIDS issue. Thereafter, Fernando Gabeira ran as Partido Verde's presidential candidate. While the party received less than 1 percent of the votes in the first-term election, the campaign led to the organization of the Greens in other regions of the country. The Greens' first federal deputy, Sidney de Miguel, was elected to represent Rio de Janeiro in 1990.

The 1992 **United Nations Conference on Environment and Development (UNCED)**, which was held in Rio de Janeiro, was an important turning point for the country's green movement as well as for Partido Verde. Partido Verde hosted the First Planetary Meeting of Green Parties at the UNCED. The delegates to the meeting issued a joint statement calling upon the world's governments to aggressively tackle the looming crises of **global warming**, pollution, habitat loss, deepening poverty, and food production (e.g., the global fish catch). After the UNCED, Partido Verde elected 54 city councilors and three mayors in Rio de Janeiro, Salvador, and Natal. The party was also finally granted definitive registration status. At the national level, the party remains small; it won 3.8 percent of the vote (15 seats) in the Chamber of Deputies in 2010, but the vote for the party fell down to 2.1 percent in the 2014 election.

In the presidential election in 2010, the Green Party candidate **Marina Silva** received 19.4 percent of the votes, putting her in third place. As a former environment minister, she was popular among educated and young people due to her achievement in reducing the deforestation rate. In 2013, Marina Silva launched a new party focused on the environment and sustainability called "Rede Sustentabilidade" (Sustainability Network). Silva entered the October 2018 national election contest under the banner of the Sustainability Network. She lost the election, however, to Jair Bolsonaro, a populist who during his electoral campaign called for opening the Amazon to development. In February 2019, three major plans were announced: constructing a hydroelectric dam, building a bridge over the Amazon River, and extending an existing highway through hundreds of miles of rainforest, threatening isolated indigenous peoples. This is viewed worriedly by environmentalists as just the beginning of development projects, including mining, farming, and logging, which could threaten the most important and biologically rich rainforest in the world. During his electoral campaign, Bol-

sonaro threatened to withdraw Brazil from the Paris Agreement, and subsequently backtracked on the former government's offer to host the 25th Conference of the Parties to the **United Nations Framework Convention on Climate Change (UNFCCC)**. Shortly after entering office, Minister of Foreign Affairs Ernesto Araújo eliminated the ministry's climate change division. Departments dealing with climate change and deforestation in the Ministry of Environment were also axed.

**BROKDORF.** The declaration in November 1973 by the electricity industry that it would build a nuclear power plant near the village of Brokdorf in Schleswig-Holstein, **Federal Republic of Germany**, signaled the beginning of a dispute that was crucial in the development of **anti-nuclear protests**. In August 1974, a local **citizens' initiative** collected over 30,000 signatures for a petition against the project. In October 1976, the electricity industry encircled the proposed site with barbed wire, triggering a series of demonstrations that led to bitter confrontations between the police and protestors. The conflict rapidly drew in militant groups from the city of Hamburg. The forceful reaction by the police contributed to the escalation of violence.

The dispute attracted national and international attention to the possibilities of protest against the development of nuclear energy. The successful campaign against further work on the site contributed to a shift in public opinion against the construction of nuclear power plants. This and other campaigns were crucial to the advance of Die Grünen in **Germany** and the emergence of anti-nuclear protest movements and green political organizations in other countries.

**BROWER, DAVID (1912–2000).** One of the most tireless organizers of environmental groups, David Brower served as the first full-time executive director of the **Sierra Club** from 1952 to 1969. Popular among club members, Brower was a pioneer in efforts to turn U.S. environmental groups into mass-membership organizations. He helped to expand the membership of the Sierra Club from 15,000 in 1960 to 113,000 in 1970. He was, however, forced to resign in 1969. Brower moved on to establish **Friends of the Earth** and devoted himself to mobilizing support and influencing public opinion. In 1982, Brower founded the Earth Island Institute, which linked environmental protection to the question of human rights and economic development in emerging nations.



**BRUNDTLAND, GRO HARLEM (1939–)**. Chair of the **World Commission on Environment and Development (WCED)**, at the time of her appointment, Brundtland was the leader of the opposition Labor Party in **Norway**. She also served for many years as prime minister. The WCED helped elevate the concept of **sustainable development**.

**BULGARIA**. As in other former communist countries, the ascent of the green movement in Bulgaria was connected to concern about the exclusive focus on economic development and exploitation of natural resources by the communist regime. Once the regime weakened, there was less emphasis on environmental protest and a new focus on economic development and social welfare. The most important manifestations of action for the environment were the formation of the Independent Union of Ekoglasnost, the Bulgarian Green Party, and the advent of a protest movement that originated in the city of Ruse on the Danube and along the border with **Romania**.

The main problem at Ruse was pollution from chlorine emissions at a factory in Giurgiu, a town across the Danube in Romania. In the mid-1980s, the contamination was so severe that thousands of people were hospitalized. In February 1988, approximately 2,000 local citizens staged a protest rally in Ruse; similar protest groups spread throughout the nation. In March 1988, intellectuals, scientists, and artists formed the Ruse Committee. Members of the committee had to endure harassment and intimidation. In 1989, the Independent Union Ekoglasnost was formed. The authorities found it harder to suppress this organization, though they severely restricted some of its activities, and it often had to operate clandestinely. Ekoglasnost managed to carry out small-scale protests and lobby against polluting industries.

The demise of the communist regime at the end of 1989 led to political reforms. Ekoglasnost played a pivotal role in the formation of both the Union of Democratic Forces and the Green Party in December 1989. The Green Party joined the United Democratic Front (UDF), securing 12 seats in Parliament in the 1990 election. In 1990, the Green Party formed a network with 90 branches across the nation.

Despite early successes and the country's serious environmental problems, focus on economic development and social welfare supplanted interest in environmental protection throughout much of the 1990s and 2000s. The green movement became divided and fared poorly in subsequent elections.

**BÜNDNIS 90/DIE GRÜNEN**. *See* GERMANY, FEDERAL REPUBLIC OF.



# C

**C40.** C40 is a global network of over 75 megacities (cities with over three million inhabitants) established in London in 2005. The network was initiated by 18 megacities and the former mayor of London Ken Livingstone. C40 aims to promote and implement climate change strategies and policies, including low-carbon energy transformations and sustainable community development. In 2011, C40 established new partnerships with the World Bank and **ICLEI-Local Governments for Sustainability** to accelerate climate action in cities through streamlined financing, greenhouse gas accounting, and uniform reporting. As of 2015, C40 cities represented approximately 550 million people and an economic share of approximately 25 percent of the global economy. In 2007, the network entered into partnership with the **Clinton Climate Initiative**, which serves as a third-party implementing body for the network's goals.

**CALIFORNIA.** If California were a country, it would have one of the largest economies (ranking fifth in 2018) in the world. California has been a leader in many environmental areas. The state introduced net metering in 2006 and a **renewable energy** portfolio standard in 2002. In 2018, California governor Gerry Brown announced that California would become carbon neutral by mid-century. The state has set ambitious targets for renewable energy use (50 percent by 2025, 100 percent by 2045). California has driven forward automobile fuel-efficiency standards, for example, with the passage of AB 1493 (commonly known as the “Pavley Bill,” after its sponsor Fran Pavley, a California legislator and climate activist). The state also moved national and international debates on carbon forward with the formation of the Global Warming Solutions Act of 2006 (also authored by Fran Pavley). California is a leader in renewable energy development in the **United States** and has also become a global leader in clean-energy technologies.

**CAMBODIA.** In the early 1990s, nongovernmental organizations (NGOs) began to form in Cambodia, although the government now treats them with suspicion. They receive their funding from United Nations programs, other



**Governor Gerry Brown organized an international conference on climate change as one of his last major events as governor. *Courtesy of Miranda Schreurs.***

nations, and international NGOs. There is also a growing Buddhist ecology movement. Cambodia has a tradition of Theravada Buddhism, in which the forests are considered sacred. Rooted in a Buddhist environmental ethic, Buddhist monks have mobilized in an effort to stop deforestation and promote environmental awareness.

Mlup Baitong, which means *green shade* in Khmer, is one of the more prominent and well-organized Cambodian environmental NGOs. Established in 1998, it works to promote environmental awareness, conservation, and **sustainable development**. Mlup Baitong focuses on community-based initiatives and emphasizes the need for both sustainable and equitable use of natural resources. Its projects include a Buddhism and environment program,



**Fran Pavley, California politician and author of AB 32, the Global Warming Solutions Act of 2006, as well as AB 1493, addressing carbon dioxide emissions from automobiles. Courtesy of Miranda Schreurs.**

as well as community forestry, ecotourism, gender and the environment education, school environmental education, and a radio and environmental advocacy program.

Since 2006, proposals to build the Cheay Areng dam have faced strong opposition from international environmental groups, Cambodian NGOs, and local communities. Areng Valley, where the dam was proposed, is in the pristine Central Cardamoms Protected Forest, which provides habitats for endangered species. The Cambodian government argued that it is necessary to build the dam to meet electrification needs and allowed Chinese companies to conduct feasibility studies. International NGOs such as Fauna and Flora International have expressed serious concerns about the dam. Mother

Nature, a local environmental NGO, worked with villagers and monks to oppose the project. They have been successful in at least bringing a temporary halt to construction.

**CAMPAIGN FOR NUCLEAR DISARMAMENT (CND).** Formed in January 1958, the Campaign for Nuclear Disarmament paved the way for social movements that protested against the war in Vietnam in the 1960s and campaigned against the deployment of nuclear weapons in the 1970s. These movements signaled the upsurge of extra-parliamentary activities that contributed to the emergence of the green movement. The CND developed in the **United Kingdom** from the disquiet (initially among pacifist groups and prominent intellectuals, writers, and thinkers) about the development of atomic weapons (including the hydrogen bomb) and the bombing of Hiroshima and Nagasaki in 1945. Among the forerunners of the CND were a wide range of local initiatives against the development of nuclear weapons as well as these umbrella organizations: the National Council for the Abolition of Nuclear Weapons Tests, created in February 1957, and the Emergency Committee for Direct Action against Nuclear War, formed in April 1957. The latter represented a response to nuclear tests the British government carried out on Christmas Island.

J. B. Priestley's article "Britain and the Nuclear Bombs," published in the *New Statesman* on 2 November 1957, triggered the CND's formation. Five thousand people attended the inaugural meeting on 17 February 1958 in London. The aims of the campaign were to persuade people that the United Kingdom should take unilateral action to cease using and producing nuclear weapons and bring other countries to the negotiating table. Between 1958 and 1965, the CND organized marches that attracted tens of thousands of participants and a vast amount of publicity. Although commitment to the CND waned in the 1960s (due partly to changes in policy, such as the signing of the Partial Nuclear Test Ban Treaty in 1963 and divisions between militants who favored direct action and those who wanted the organization to remain primarily a pressure group), links were made with protests against the Vietnam War.

Further marches to Aldermaston in the 1970s strengthened the connection between the CND and the **anti-nuclear protest** movements. The CND was affiliated with the Ecology Party, **Friends of the Earth**, and **Greenpeace**, especially in campaigns against the deployment of nuclear weapons in Europe. The CND increasingly became part of anti-nuclear protests throughout Western Europe in the 1980s. In the 2000s, the CND campaigned against the war in Iraq, nuclear reprocessing, the transport of plutonium, American plans for a missile defense system, and NATO's nuclear weapons.

**CANADA.** Canada is the second largest country in the world after **Russia**, but has a population of only about 36 million people, most of whom live within 160 kilometers (99.4 miles) of the U.S. border. As a result, Canada still has large amounts of open and pristine land. The Canadian economy, however, depends heavily on resource extraction, including by the forestry, mining, and gas and oil industries. The Athabasca oil sands (also known as *tar sands*) in Alberta have turned swaths of the province into a lunar-like landscape. This unconventional form of oil extraction is itself highly energy intensive and polluting and has raised concerns in the country and globally. **Greenpeace**, Athabasca Chipewyan First Nation, and other environmental and local groups in Canada have organized anti-tar sands campaigns nationwide since 2006.

Canada has a strong environmental movement. The National and Provincial Parks Association of Canada was set up in 1963, the **Sierra Club** in 1970, and the Canadian **Audubon Society** in 1971. **Greenpeace** has its roots in British Columbia.

The Green Party of Canada was established in 1983. In the 2004 election, it fielded 308 candidates and won 4.3 percent of the vote. In the 2011 federal election, the Green Party leader Elizabeth May was the first party member elected to Parliament, representing Saanich-Gulf Islands on southern Vancouver Island. She was reelected in the 2015 election.

Green parties have been established in several of the Canadian provinces, including Alberta, British Columbia, Manitoba, Nova Scotia, Ontario, Prince Edward Island, Quebec, and Saskatchewan. Other major players in the green movement are the many tribes that make up the First Nations. *First Nations* refers to the several hundred indigenous groups across Canada. These groups have taken up many environmental-justice fights and have opposed projects that threaten their lands, such as oil extraction from the tar sands in Alberta and the Trans Mountain Pipeline, which carries oil from Alberta to British Columbia. This cross-province pipeline runs through indigenous land, and a spill of any size would affect the land and its inhabitants. Many First Nations leaders are strong supporters of conservation, divestment, and **renewable energy**.

**CARBON DISCLOSURE PROJECT (CDP).** The focus of this nonprofit organization is on contributing to creating sustainable economies by adding up, measuring, and understanding the impact of investors, companies, and cities on the environment. The CDP claims to have the most comprehensive collection of self-reported environmental data in the world. It has offices in over 50 countries.

**CARBON FOOTPRINT.** The concept *carbon footprint* is similar to *ecological footprint*. It is a measure of the greenhouse gas emissions produced by an individual or group and is usually expressed in *equivalent tons of carbon dioxide*. The most common way to calculate a carbon footprint is based on fuel consumption. A large carbon footprint suggests a carbon-intensive lifestyle or output.

**CARBON PRICING.** Proposals for new taxes to modify behavior, in particular to reduce resource consumption, have arisen in many developed countries. Concern about the **greenhouse effect**, the inefficient use of natural resources, the negative externalities of fossil fuel consumption, and an interest in applying the **polluter pays principle** are some of the reasons why carbon taxes have been introduced in various countries, including **Australia**, **Chile**, **Denmark**, **Finland**, the **United Kingdom**, **Ireland**, **Japan**, **Norway**, **South Africa**, and **Sweden**. In 2018, the Canadian Parliament passed the Greenhouse Gas Pollution Pricing Act, and the number of countries and subnational governments that have adopted carbon-pricing schemes is increasing. The World Bank produces a report surveying carbon-pricing trends globally. *See also* EMISSIONS TRADING.

**CARSON, RACHEL (1907–1964).** In 1951, Rachel Carson published a best-selling study in natural history, *The Sea around Us*. Subsequently, she dedicated herself to writing and in 1955 published *The Edge of the Sea*. In the 1950s, she became interested in and deeply disturbed by the impact of chemical pesticides and insecticides on wildlife, habitats, and human life. Her 1962 book *Silent Spring* helped give birth to the modern environmental movement. Its provocative and rousing account of the damage pesticides were causing to wildlife resonated around the world.

**CDP.** Formerly known as the Carbon Disclosure Project, the CDP is an organization working with institutional investors, companies, and subnational governments to act on climate change, water scarcity, flooding, pollution, and deforestation. These are areas that present both material risks and opportunities for investors. CDP gathers data to help companies and cities monitor their impact and progress on reaching goals, and make investment decisions that drive action toward a more sustainable environment. As of 2015, CDP had worked with 882 institutional investors holding US\$95 trillion in assets to help reveal risks in their investment portfolios. Dozens of major companies have made use of the CDP system to mitigate environmental risks in their supply chains.



**CENTER FOR INTERNATIONAL ENVIRONMENTAL LAW (CIEL).**

The CIEL formed in the United States in 1989 as a nonprofit organization. It seeks to strengthen international law and institutions to protect the environment, train communities to use international law to protect their human rights, make financial institutions more environmentally accountable, and increase transboundary corporate accountability. Its main issues include trade, climate change, forests, toxins, green financing, and corporate accountability.

**CENTRAL AFRICA.** Comprising Burundi, Rwanda, Chad, and the Democratic Republic of Congo, Central Africa is rich in natural resources, including some of the most important tropical rainforests in the world. However, the history of war, colonial oppression, and corrupt governments have left the area in poverty and with serious environmental degradation. In 2014, the Central African Greens Federation was established during the Central African Greens Congress held in Kinshasa, Democratic Republic of Congo. Representatives of green parties from the Republic of the Congo (Congo-Brazzaville), Gabon, Chad, and the Democratic Republic of Congo participated in the congress.

**CHERNOBYL.** This town near Kiev in Ukraine, formerly part of the Soviet Union, will forever be known as the site of the worst civilian nuclear-power disaster in history. On 26 April 1986 following a failed experiment, the nuclear reactor at Chernobyl exploded, releasing radioactivity into the atmosphere. Several thousand people, including “human robots” sent in to deal with the disaster, died shortly after the explosion, unknown numbers were exposed to deadly radiation with long-term health impacts, and over 130,000 had to be evacuated from the region. The explosion realized the worst fears of opponents of nuclear power and hardened public opinion against the development of nuclear power plants in many parts of Europe. Programs for the development of **nuclear energy** for civilian use were canceled or put under new safety regimes in many countries. Radioactive clouds containing iodine-131, caesium-134, and caesium-137 traveled thousands of kilometers, affecting many countries in Europe and strengthening the anti-nuclear green movement. Decades after the accident, a new confinement structure to prevent radiation release was built at a huge expense. The containment dome, itself a technological feat of tremendous proportions, was moved into place in 2017. An award-winning HBO documentary, *Chernobyl*, was released in 2019.

**CHINA, PEOPLE'S REPUBLIC OF (PRC).** Rapid economic development and a population of over 1.4 billion have combined to make China one of the most polluted countries in the world. The severity of the pollution and

natural resource degradation in China has begun to generate governmental awareness of the need to address pollution and promote **sustainable development** and has contributed to the emergence of environmental movements and nongovernmental organizations (NGOs).

The literature is uncertain as to which environmental NGO was the first to formally register in China: either the Saunders' Gull Conservation Society of Panjin City or the Academy for Green Culture, affiliated with the Academy for Chinese Culture, and now known as *Friends of Nature*. Global Village Beijing and Green Home were also established at this time. Since the mid-1990s, there has been explosive growth in environmental NGOs; several thousand environmental NGOs are now operating in the country. While environmental protesters are still sometimes suppressed, and at times even imprisoned, the state has accepted the fact that environmental NGOs play an important role in helping it achieve its policy goals. Environmental protest is most likely to lead to suppression when it directly opposes important state goals.

When environmental groups first emerged in China, they were primarily focused on environmental education and nature conservation. Increasingly, however, they are protesting development plans (e.g., chemical facilities, waste incineration plants, steel plants, and dams) that threaten the environment and human settlements. They are also protesting corruption among local government officials, which has contributed to environmental destruction. China's environmental NGO community still faces many hurdles, including difficulties in winning governmental approval of registration requests, fundraising, and a very watchful governmental eye. The Internet and social media have played an important role, opening a channel and space for citizen participation. In 2015, the documentary film about air pollution and its health impacts *Under the Dome* by Chai Jing, a famous journalist and TV presenter, was released. It attracted a huge amount of attention before being removed from the Internet by censors.

Since the early 2000s, citizens have become increasingly active in data collection and information dissemination about pollution, air quality, water pollution, and biodiversity through various platforms, such as those of the Institute of Public and Environmental Affairs, Friends of Nature, Society of Entrepreneurs & Ecology, China Citizen Science, Institute of Botany, Chinese Academy of Science, Green Beagle Environment Institute, Green Anhui Environmental Development Center, and Shenzhen Bird Watching Society.

There are a number of local governments and enterprises that have started to collaborate with NGOs in public monitoring activities. In doing so, they aim to disclose environmental information about pollutants to the public. For example, Shandong Environmental Protection Commission initiated collaboration with the Institute of Public and Environmental Affairs on pollution mapping and required the corresponding environmental-protection agencies

at municipal and township levels to initiate interactive online platforms for government-public communication in governing the environment. Local governments are also trying to follow up on citizens' online posts to enhance environment monitoring and policy implementation.

In 2011, Green Beagle launched a campaign to invite public participation in monitoring air quality called "I Measure My Motherland's Air Quality." The campaign brought together volunteers from more than 20 Chinese cities, including Shanghai, Guangzhou, Wenzhou, Wuhan, and Lanzhou. Since 2015, Wuhan Green Cannan and 13 other local NGOs have worked together to create a "citizen air quality observers network," promoting public participation, air-quality monitoring, data collection, and information dissemination in air pollution control and prevention.

The Chinese government's initiatives in environmental protection are also worth mentioning. The government has set targets for reducing greenhouse gas emissions, enhancing energy efficiency, and reducing air pollution; it has a program to establish a network of national parks and is slowing imports of waste from other world regions. There has been a significant greening of Chinese Communist Party ideology. In October 2015, the state embraced the concept of ecological civilization; it was first mentioned in the Five Year Plan.

In 2006, Temporary Measures for Public Participation in Environmental Impact Assessment and in 2015, Measures for Public Participation in Environmental Protection were established. This legislation provides a legal basis for public participation in environmental protection. In 2015, the National People's Congress amended the Environmental Protection Law allowing NGOs to initiate environmental public interest litigation. However, at the same time, the government has taken steps to curtail international NGO activities in China. In 2017, the government passed the Foreign NGO Law, establishing new controls over foreign NGO activities in China. There have also been numerous instances of environmental protests being curtailed and human rights activists being imprisoned. *See also UNDER THE DOME.*

**CHIPKO ANDOLAN.** This movement arose in April 1973 in the village of Gopeshwar, Uttar Pradesh, India. A successful protest against a logging company inspired many others, and the movement spread to different parts of the Himalayas and **India**. *Chipko* means *embrace* and was the name given to protestors who clung to trees to spare them from loggers. The protestors' (mainly women in Indian villages) aim was to protect their livelihoods, since the forests provided them with food and fuel and prevented soil erosion and flooding. Their strategy, protest through **nonviolence**, was inspired by the Gandhian concept *satyagraha*. Chipko Andolan has been celebrated for us-

ing nonviolent protest and highlighting the predicament of communities in less developed countries as they address environmental issues and defend a traditional way of life.

**CHLOROFLUOROCARBONS (CFCs).** *See* OZONE LAYER.

**CIRCULAR ECONOMY.** *Circular economy* refers to an economic system in which waste is greatly minimized by the collection and reuse of waste products and emissions. It follows a loop concept of resource use, recycling, and reuse. Although the roots of the concept are multiple and difficult to attribute, the Ellen McArthur Foundation pointed out the potential economic benefits of a circular economy for Europe in its report *Towards the Circular Economy*, produced with McKinsey & Company. The European Commission took up the concept in its *Manifesto for a Resource Efficient Europe*. In 2013, the Circular Economy 100 was created: the platform brings together 100 corporations, regions, and innovators to work together in order to scale up the concept. In 2015, the concept entered European law when the European Parliament adopted the circular economy package. The EU Action Plan on the Circular Economy sets out measures to “close the loop” of the circular economy by tackling all phases in the life cycle of a product, from production and consumption to waste management and the market for secondary raw materials. It focuses on using natural resources sustainably (both economically and environmentally), maintaining the value of products and materials, and minimizing waste. Parallel to the EU, some member states, such as Germany and France, have started to take their own measures to support a circular economy. Also, Japan and, increasingly, China are working to implement circular economy concepts domestically.

**CITIZEN SCIENCE AND DATA GOVERNANCE.** In the digital age, data is taking on a new role in society, giving citizens new opportunities to influence decision-making processes. By engaging the public in scientific observation and assessment of local environmental conditions, citizen science enhances community involvement in local environmental decision making. For example, the U.S. Environmental Protection Agency (EPA) has initiated a citizen-science platform, Community-Focused Exposure and Risk Screening Tool (C-FERST), to enhance information about public health risks caused by environmental stressors. Communities have engaged with EPA scientists to design and pilot this program, exploring the use of this tool for information assessment and decision making. Through initiatives like C-FERST, citizen science has the potential to enhance transparency and openness, and expand democracy in data governance for sustainability. In **China**, citizens have been increasingly integrated into environmental protection pro-

grams through collaboration with research institutes and NGOs. In 2011, a Chinese NGO launched a campaign to involve the public in monitoring air quality called “I measure my motherland’s air quality.” The campaign convened volunteers from more than 20 Chinese cities. The engagement of citizens in climate science has created promising potential for greater public participation in addressing the world’s environmental problems.

**CITIZENS’ INITIATIVES.** The term *citizens’ initiatives* has been used to describe the organization of **anti-nuclear protests** in the early phase of their development. In the Federal Republic of **Germany**, citizens’ initiatives (Bürgerinitiativen) can be tracked to the citizens’ associations (Bürgervereine) of the 1950s and 1960s. The latter were formed by leading figures in local communities to support community projects. To a degree, they were an attempt to fill the vacuum left by traditional political parties that tended to neglect local interests. This void became even larger in the 1960s and resulted in the advent of student protest movements. The notion of citizens’ initiatives continued in the 1960s in the wake of the protests for greater participation by citizens in decision making.

In Germany, campaigns such as those at Wyhl and **Brokdorf** against the development of nuclear energy were initially carried out mostly by local citizens’ initiatives. The citizens’ initiatives also had strong connections with the reform-oriented youth wing of the Social Democratic Party. Above all, the campaigns against the development of nuclear power led to the spread of citizens’ initiatives that were supported by a powerful umbrella organization, the Bundesverband Bürgerinitiativen Umweltschutz (Federal Association of Citizens’ Initiatives for Environmental Protection).

Citizens’ initiatives have not only been influential in persuading traditional political organizations to reconsider their policies on the environment, but they have also played a pivotal part in the formation of green lists or parties. Many candidates for green parties gained their political experience and expertise through involvement in citizens’ initiatives. Participation in these associations contributed to the desire of activists in green parties to practice **direct democracy** at the local, regional, and even national levels. *See also* GERMANY, FEDERAL REPUBLIC OF.

**CITIZENS’ MOVEMENTS.** Like **citizens’ initiatives**, the term *citizens’ movements* has been used to refer to the groups of individuals, usually at the local level, that joined together to protest environmental wrongs. In **Japan**, citizens’ movements arose to protest Minamata mercury poisoning, *itai-itai* (“it hurts-it hurts”) disease from cadmium poisoning, asthma problems in industrialized areas, loss of sunshine from the building of skyscrapers, food contamination, and construction projects.



**Citizens' initiative protesting nuclear waste storage in Germany. Courtesy of Miranda Schreurs.**

**CITIZENS NETWORK FOR SUSTAINABLE DEVELOPMENT (CITNET).** The CITNET was founded in 1990 in support of the **United Nations Conference on Environment and Development (UNCED)**. The network has as its main goal forwarding initiatives for **sustainable development** across the **United States**. Special attention is paid to grassroots organizations, communities, and citizens' movements.

**CLEAN DEVELOPMENT MECHANISM (CDM).** This is a flexible mechanism that permits Annex I countries of the **Kyoto Protocol** (OECD countries as of 1992) to obtain credits (certified emissions reductions) toward their own greenhouse gas emissions reductions by taking actions to reduce greenhouse gas emissions in developing countries. The idea behind the CDM is that it may be more cost effective to reduce greenhouse gas emissions in developing countries than in developed ones. At the same time, developing countries can acquire low-carbon technologies and knowhow through the transfer. Criticism of CDM funding includes the fact that too much was directed at China and India and not enough at less developed countries and

that it was difficult to show that the projects did not actually lead to a shift in investments into other activities creating greenhouse gas emissions. *See also* EMISSIONS TRADING; JOINT IMPLEMENTATION.

**CLEAN WATER ACTION.** Formed in 1972 in the **United States**, this is a watchdog and advocacy organization with a membership of about one million. The group focuses on clean, safe, and affordable drinking water and on empowering people to make democracy work. It is engaged in political advocacy, such as efforts to stop the Trump administrations from weakening clean-water-protection regulations. The group played a critical role in shaping and strengthening key water-protection legislation, including the Clean Water Act, the Safe Drinking Water Act, and the Superfund program for toxic cleanups. *See also* COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA).

**CLIMATE ACTION NETWORK (CAN) INTERNATIONAL.** A global network of independent NGOs committed to reducing carbon emissions, CAN promotes information exchange to develop coordinated strategies to address climate issues and to influence international climate, biodiversity, and sustainable development policies. CAN International is the network's umbrella organization. It publishes the newsletter "ECO" to inform readers on international climate and sustainable development negotiations. CAN has regional network hubs including CAN Eastern Africa, Eastern Europe, Caucasus and Central Asia, Europe, Latin American, CAN-Arab World, Pacific Islands CAN, CAN-South Asia, Southern African Regional CAN, CAN-South East Asia and CAN West, and Central Africa. CAN national networks include CAN-Australia, CAN-Rac Canada, CAN-China, Rac-France, CAN-Japan, New Zealand Climate Action Network, CAN-South Africa, CAN-Tanzania, CAN-Uganda, and US Climate Action Network.

**CLIMATE CHANGE.** This term is commonly used to refer to the changes in climatic systems that a majority of scientists believe are being caused by rising levels of greenhouse gases in the atmosphere. Whereas the term *global warming* directs attention to rising average global temperatures, the term *climate change* focuses attention on the broader climatic implications of the **greenhouse effect**.

One early effort to evaluate changes in temperature was the World Climate Research Program, initiated in 1979 by the World Meteorological Organization and the International Council of Scientific Unions. By the mid-1980s, scientists had become increasingly aware of the possibility of the warming of the Earth's atmosphere as a result of carbon dioxide and other greenhouse gas emissions. At the Villach Conference in 1985, scientists publicized the

fact that there had been a slight increase in the average temperature across the world over the past century and that there appeared to be a correspondence between this finding and the rate of emissions of carbon dioxide and other gases. The most alarming finding was that if this trend continued, there could be significant increases in average temperature across the Earth and severe changes in weather patterns, including droughts, floods, and storms. Above all, scientists have speculated on the impact of climate change on regions covered with ice, notably glaciers, **the Arctic**, and the Antarctic, and the consequences this melting would have on sea levels. A vast proportion of the world's population living in coastal regions could be forced to relocate, and some countries, notably small islands in the Pacific Ocean, would vanish under seawater.

In 1988, at a conference held in Toronto, more than 300 scientists and policy makers from nearly 50 countries and international organizations noted that a 50 percent reduction in carbon dioxide emissions would be necessary to stabilize the atmospheric concentration of greenhouse gases. They suggested, as an initial target, a 20 percent reduction in carbon dioxide emissions by the year 2000. Fears about the greenhouse effect also coincided with speculation about the impact of chlorofluorocarbons (CFCs) on the depletion of ozone at high altitudes and the potential catastrophe that could be unleashed by the hole in the **ozone layer**. Also, in 1988, the World Meteorological Organization and the United Nations Environment Programme set up the **Intergovernmental Panel on Climate Change (IPCC)** to study and assess the risks associated with human-induced climate change based on the findings of thousands of peer-reviewed scientific and technical articles. The IPCC is divided into working groups that assess and report on: the physical basis of climate change (Working Group I); climate change impacts, adaptation, and vulnerability (Working Group II); and mitigation (Working Group III). There is also a task force on national greenhouse gas inventories. Each working group has released several reports.

Concerns about the greenhouse effect were a major factor behind the organization of the **United Nations Conference on Environment and Development (UNCED)**, held in Rio de Janeiro in 1992, to bring together nation-states as well as businesses, industries, and nongovernmental organizations (NGOs). The **United Nations Framework Convention on Climate Change (UNFCCC)**, which had been initiated by the United Nations General Assembly in 1991, was signed by 153 nations and by the European Union (EU) at the 1992 UNCED. The 1997 **Kyoto Protocol** to the UNFCCC is the first international agreement with the aim of reducing greenhouse gas emissions. In 2015, the 21st Conference of the Parties to the UNFCCC adopted the **Paris Agreement**, which sets as a goal to limit temperature rise to well below **2 degrees** and to strive to keep the increase below 1.5 degrees. Unless



current greenhouse gas emission trends are dramatically curtailed, it is highly unlikely that the 1.5-degree target can be kept and even the 2-degree target will be a stretch.

In 2007, U.S. vice president Al Gore's movie *An Inconvenient Truth*, which introduced the subject of climate change, won the Academy Award for best documentary film. Credited for his efforts for climate change activism, he earned the Nobel Peace Prize in 2007 jointly with the IPCC. He has since produced *An Inconvenient Sequel: Truth to Power* (2017). Many other movies about climate change have been produced including *Before the Flood* (2016), *Tomorrow* (2015), *Chasing Ice* (2012), *The Island President* (2011), and *The Age of Stupid* (2009).

**CLIMATE DENIERS.** See CLIMATE SKEPTICS.

**CLIMATE INDUCED HUMAN MIGRATION AND DISPLACEMENT.** As **climate change** is accelerating at a rate that has exceeded most scientific forecasts, societies around the world are trying to adapt to the changing environment, but for some it may mean displacement and migration. According to the **Intergovernmental Panel on Climate Change (IPCC)**, greater climate variability will have an increasing impact on both the livelihoods and safety of the world's most vulnerable communities. Based on the report published by the Internal Displacement Monitoring Centre, an estimated 22 million people were displaced in 2013 by natural disasters. Asia is the worst affected region with 19 million people displaced in that year; Typhoon Haiyan alone displaced 4.1 million people in the Philippines. Floods and droughts are also causing significant displacement in sub-Saharan Africa where highly vulnerable populations live. See also CLIMATE REFUGEES.

**CLIMATE JUSTICE.** Climate justice shares similar concerns with social justice and **environmental justice**. Historically, developed countries have emitted much more greenhouse gases than developing countries. According to the **World Resources Institute (WRI)**, the **United States** and European Union account for more than half of the cumulative carbon dioxide (CO<sub>2</sub>) emitted between 1850 and 2011 worldwide. When developing countries are asked to reduce their greenhouse gases, they often use a climate-justice argument in calling for technical and financial assistance in combatting climate change causes and impacts. **Climate change** impacts are, moreover, not only geographically distinct, but they affect the socially most vulnerable people the most severely. On average, developed countries with good infrastructure are more resilient to climate change than developing countries. Therefore, the proponents of climate justice argue that the responsibility for reducing green-

house gases, as well as for supporting climate change **adaptation**, needs to be differentiated according to historical contributions to global greenhouse gas emissions. Both the **Kyoto Protocol** and the **Paris Agreement** to the **UNFCCC** were adopted under the principle of “common but differentiated responsibilities.”

*Climate justice* also refers to procedural justice in decision-making processes. The proponents of climate justice emphasize that those who are most affected by climate change, such as the small island states, should have a special place in climate negotiations.

**CLIMATE MAYORS.** This bipartisan network of U.S. mayors was formed in 2014. It has pledged to advance action on climate change at the local level and to push for meaningful climate action at the state and federal levels. The mayors strengthen local voices by jointly issuing position statements on key federal legislation and initiatives and aim to set the agenda in favor of climate action.

**CLIMATE REFUGEES.** Although not officially recognized as such under international law, there are a growing number of individuals who could be considered climate refugees, that is, individuals who are forced to leave their homes as a result of extreme weather events tied to climate change. Droughts, floods, salinization of soils, and extreme temperatures are making some regions of the planet increasingly uninhabitable. These extreme events appear to be contributing to human and animal displacement and may be exacerbating tensions and contributing to conflicts in some regions, such as Syria or Sudan.

*Climate refugee* is a controversial term. Based on the 1951 Refugee Convention, *refugee* refers to someone who, “owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country.” This definition does not include climate challenges and extreme weather events as the cause of migration. Climate-refugee issues were not addressed at the Paris Climate Summit, and the gap between the international framework and the real world remains. The most recent court case can be found in **New Zealand**. A family from Kiribati, a small island nation, applied to the New Zealand government for climate-refugee status, stating that the danger from climate change in their home country amounted to persecution. The court rejected the argument, and the family was deported.

**CLIMATE SKEPTICS.** Individuals who question the accuracy or seriousness of the science behind **climate change** are often referred to as *climate skeptics* or *climate deniers*. The rise of climate skepticism has polarized debates on climate change and stalled or blocked political action intended to check greenhouse gas emissions. The situation is particularly dramatic in the **United States**, where climate skeptics and climate deniers have been supported by politicians in Congress as well as by President Donald Trump. The rise of the **Tea Party**, a conservative movement within the Republican Party, strengthened the influence of climate skeptics at the national level. Also critical to the rise of climate skepticism have been the efforts of conservative think tanks like the Cato Institute, the American Enterprise Institute, and the Heartland Institute, which have deliberately sought to plant seeds of doubt about climate science in the minds of the public. Conservative media outlets like Breitbart News and Fox News have helped spread skeptics' messages. Climate skepticism is behind the U.S. decision to pull out of the **Kyoto Protocol** and Trump's threat to pull out of the **Paris Agreement**. Many far-right parties in Europe have also voiced anti-climate change positions. Some Brexiters (those in Britain favoring a divorce from the European Union) are also Clexiters (favoring an exit from the Paris [Climate] Agreement). The German *Alternativ für Deutschland* (Alternative for Germany) has also questioned climate science.

**CLINTON CLIMATE INITIATIVE.** This is an initiative of the Clinton Foundation. It supports projects aimed at climate action that can be scaled up for larger impact. The initiative launched the Women in Renewable Energy Network (WIRE).

**CLUB OF ROME.** At the instigation of Italian entrepreneur Aurelio Peccei, a group of 30 industrialists, scientists, economists, politicians, and bureaucrats met in 1968 to discuss issues of global concern, including environmental and economic issues. As a result of their first meeting, held in Rome, the group named itself the Club of Rome and set out to examine the dynamic interrelationships among economic development, the environment, population, resources, and industrialization, and their political and social implications.

The impact of the Club of Rome on the environmental movement was ensured when a report it had commissioned in 1970 was published two years later under the title *The Limits to Growth*. The alarming findings of this report ensured sales of 20 million copies worldwide and secured the Club of Rome a place in the history of the green movement. The Club of Rome exercised significant influence on agendas for debate over environmental policy, including the **United Nations Conference on the Human Environ-**

**ment (UNCHE)** held in 1972. The Club of Rome, while recognizing the exploratory nature of much of *The Limits to Growth* study, was intent on provoking debate, especially among political and economic elites. It has since commissioned further reports and continued to exercise significant influence in the area of environmental and industrial policies.

The Club of Rome has 34 national associations. It focuses on global problems, such as rising global inequality, climate change, and resource overuse. The Club of Rome aims to improve average human well-being and reduce the ecological footprint per person through developing alternative models of economic development. In 2018, the Club of Rome turned 50.

**COMMISSION ON SUSTAINABLE DEVELOPMENT (CSD).** The defunct CSD was established in December 1992 in order to monitor the implementation of agreements made at the **United Nations Conference on Environment and Development (UNCED)** held in Rio de Janeiro in 1992. The CSD specifically oversaw implementation of **Agenda 21** and the Rio Declaration on Environment and Development. It also provided policy guidance for the Johannesburg Plan of Implementation. The CSD met annually in New York in two-year cycles. In 2012, the United Nations Conference on Sustainable Development created the High-Level Political Forum in order to replace the CSD. *See also* RIO+20; WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT.

**COMMONER, BARRY (1917–2012).** Author of *The Closing Circle: Nature, Man, and Technology*, Commoner was a biologist associated with the University of St. Louis. Apart from his interest in plant pathology, Commoner was prominent in campaigns against nuclear testing and for environmental protection. In the 1970s, he engaged in a highly publicized debate with **Paul Ehrlich** over the danger of **population growth**.

**COMMON-POOL RESOURCES.** Public resources such as fisheries, air, and international waters are often referred to as *common-pool resources*. Common-pool resources are not privately owned; they are characterized by the access that many individuals have for their use. A challenge for the protection of common-pool resources is that individuals, groups, and countries may have little incentive to contribute or invest in common-pool-resource protection or conservation when they feel that others may not do their fair share. Since denying noncontributing users access to the common-pool resource may be highly impractical or even impossible, a problem that may arise is irresponsible or excessive use. This can lead to rapid depletion,

pollution, or destruction of the resource. *See also* COMMON-PROPERTY REGIMES; TRAGEDY OF THE COMMONS; OSTROM, ELINOR (1933–2012).

**COMMON-PROPERTY REGIMES.** Common-property regimes are a way of managing natural resources to ensure their long-term sustainability. Common-property regimes are institutional arrangements in which a select group of individual parties shares both the rights to and responsibility for a natural resource. Common-property regimes are designed to prevent the depletion of **common-pool resources** that often arises from the tendency of local populations to overuse such resources, threatening their long-term sustainability. This is often referred to as the “**tragedy of the commons.**” Conferred communal property rights to a group of users by way of common-property regimes is thought to provide incentives for responsible, efficient, and controlled use of resources.

While common-property regimes were once prevalent and established in communities around the world, economic and technological changes, as well as initiatives aimed at dissolving them undertaken by numerous governments, have led to widespread abandonment of the institution in favor of other arrangements.

**COMMUNITY ENERGY.** Communities are increasingly leading actions that tackle energy-related issues with local groups’ participation and engagement. Some of the many features of community energy are local engagement, leadership, and collective benefit. In terms of energy systems, *community energy* usually refers to low-carbon and **renewable energy** (such as solar photovoltaic panels, wind turbines, or hydroelectric generation), which is produced locally and distributed through a heat network or private-grid arrangement. Since it is produced locally, community energy can reduce transmission losses and lower the cost of energy in the long run. It is a strategy that has been applied in several developed countries, such as the **United Kingdom** and **Germany**.

**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA).** The U.S. Congress passed CERCLA, often referred to as *Superfund* legislation, in 1980 in response to the **Love Canal** disaster and growing public pressure. Superfund authorizes the president to respond to releases or threatened releases of hazardous substances into the environment. It sets aside funds to clean up the nation’s worst abandoned toxic and hazardous-waste sites. Superfund was originally funded by hazardous-waste taxes and general tax reserves. There were also two specific funds set up. The Hazardous Substances Response Fund, avail-

able for cleanup of emergency spills, is financed by a tax on petroleum and chemical feed stock. The Post-Closer Liability Fund is available for already shut-down companies and is financed by a tax on hazardous waste.

Superfund legislation required the Environmental Protection Agency (EPA) to compile the National Priority List (NPL) of the **United States'** most dangerous hazardous-waste sites. The NPL ranks sites according to their human-health and environmental risks; cleanup begins on sites according to their ranking. In May 2005, the EPA had listed 1,604 sites on the NPL. In 2018, 385 sites were cleaned up and removed from the list, bringing the total number to 1,186. Another 49 sites have been proposed for the list.

Superfund holds liable the people responsible for the release of hazardous waste at these sites and establishes a trust fund for cleanup when no responsible party can be found. Organizations such as **Greenpeace**, **Friends of the Earth**, the **Sierra Club**, and the United States Public Interest Research Group (U.S. PIRG) have criticized the government for its slow pace in cleaning up Superfund sites.

**CONSERVATION INTERNATIONAL.** Founded in 1987 in the **United States**, this NGO is primarily concerned with biodiversity protection and nature conservation. Conservation International has offices in more than 30 countries and works with local communities to protect and conserve nature. It partners with universities to conduct scientific research on conservation and with companies to enhance **sustainable development**. *See also* WORLD WIDE FUND FOR NATURE (WWF).

**CONSERVATIONISM.** The key schools of thought in early U.S. environmentalism were conservationism and preservationism. Conservationism, heavily influenced by George Perkins Marsh, was a movement initiated in the 1890s by forester Gifford Pinchot, and later led by **Aldo Leopold**. The movement embodied Enlightenment ideals of rationality, science, and utilitarianism. Stressing the efficient utilization of resources, particularly sustained-yield forest management, it led to the early creation of government bureaucracies to manage resources, such as the U.S. Forest Service (established in 1905) to manage vast federally owned forest areas, and the Reclamation Service (established 1902, later the Bureau of Reclamation) to undertake irrigation of arid western regions for settlement and farming. This was an era that saw a flowering of scientific societies and organizations aimed at the rational study and management of natural resources. These included private scientific societies such as the American Fisheries Society (1870), the American Forestry Association (1875), the American Ornithologists Union (1883), and the **National Audubon Society** (1886). Elite outdoor clubs such as the Boone and Crockett Club (1885) advocated for game-conservation

legislation, and their sportsmanship codes acted as a type of conservation policy. The 1890 U.S. Census Report ignited public opinion in favor of conservationism, calling attention to the quickly disappearing supplies of timber and arable land in the United States.

The competing philosophy of preservationism, embodied in the views of naturalist and mystic **John Muir** (who cofounded the **Sierra Club** in 1892), was based on the Romantic ideologies of William Wordsworth and Jean-Jacques Rousseau, which held that wild, primitive, and ideal forms of nature deserve preservation in pristine form. Preservationism thus held that nature reserves and parks should be off limits to resource use, in contrast to the efficient utilization of resources for human benefit championed by conservationists. These movements contributed to the establishment of a national parks system in the United States.

Many writers and painters helped to spread ideas about conservation and preservation. George Catlin, a Romantic landscape painter, traveled the U.S. frontier in 1832 and popularized wilderness areas that would later become **national parks**. Ralph Waldo Emerson's writings, such as the 1836 essay "Nature," greatly influenced Henry David Thoreau and other transcendentalists. Naturalist John James Audubon contributed to early conservationism by writing on forest depletion and popularized appreciation of wildlife through his impressive paintings of birds.

Henry David Thoreau wrote extensively about appreciating and living in harmony with nature (such as in the 1854 *Walden*). In his essay "Civil Disobedience," he laid the foundation for nonviolent social movements resisting unjust policies, a strain of thought that led, through Mahatma Gandhi and Martin Luther King Jr., to the later direct-action tactics of environmental groups such as **Greenpeace**. Direct action, bearing witness, and conscientious objection (such as to military service by religious groups such as the Quakers) became important threads in American thinking and, hence, later environmental campaigns.

George Perkins Marsh's 1864 *Man and Nature* noted the historical effects of unsustainable resource management and advocated the conservation of natural resources in keeping with ecological views. Marsh defined basic principles of conservation, describing scientifically the relationships among soil, water, and vegetation. His work contributed to the establishment of the National Forestry Commission in 1873. *See also* NATIONAL AUDUBON SOCIETY.

**CONVENTION ON BIOLOGICAL DIVERSITY (CBD).** At the **United Nations Conference on Environment and Development (UNCED)**, world leaders agreed on the Convention on Biological Diversity. The convention was the first global agreement dedicated to the conservation and sustainable use of the world's biological diversity, or **biodiversity**. The convention en-

tered into force in December 1993 after obtaining the requisite number of signatories. Over 196 countries have since ratified the convention, whose goals include “the conservation of biodiversity, the sustainable use of the components of biodiversity, and the sharing of benefits arising from the commercial utilization of genetic resources in a fair and equitable way.” The Convention on Biological Diversity aims to expand the information base related to biological diversity and requires nations to develop national biodiversity strategies, action plans, and indicators for measuring trends in biodiversity.

The convention is in charge of a variety of issues related to biological diversity, regulating access to genetic resources and biotechnology, impact assessments, conservation incentives, public education, financial resources, benefit sharing, and the national reporting of implementation efforts.

The Cartagena Protocol to the biodiversity convention was adopted in January 2000. This protocol attempts to protect biological diversity from risks posed by **genetically modified organisms (GMOs)**. It created an advanced informed-agreement procedure for countries to be properly informed before importing GMOs. This protocol also established the Biosafety Clearing-House, which oversees the exchange of information on GMOs and helps countries with implementation.

At the 2010 Nagoya Conference of the Parties to the Convention on Biological Diversity, several new goals were established, including cutting by at least half the loss of natural habitats, expanding nature reserves to 17 percent of global land area by 2020 (up from about 13 percent at the time), and expanding marine reserves from 1 percent to about 10 percent of the world’s seas. Countries agreed to draw up national biodiversity preservation plans. Finally, new rules on how countries should share benefits derived from genetic resources were to be established.

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity entered into force in 2014. It is to provide a legal framework for fair and equitable benefit sharing, which is one of the main objectives of the CBD. It is expected that genetic resources and associated traditional knowledge held by indigenous and local communities can be utilized in a fairer way than before as the protocol sets access, benefit sharing, and compliance obligations for its parties. The Nagoya Protocol is particularly relevant to pharmaceutical, biotechnology, and agricultural industries.

The tenth meeting of the Conference of the Parties to the CBD adopted the Strategic Plan for Biodiversity 2011–2020 and issued the Aichi Biodiversity Targets. The Strategic Plan and the 20 action targets provide a framework for protecting biodiversity. The Strategic Plan consists of five goals: address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society; reduce the direct pressures on biodiversity and pro-



mote sustainable use; improve the status of biodiversity by safeguarding ecosystems, species, and genetic diversity; enhance the benefits to all from biodiversity and **ecosystem services**; and enhance implementation through participatory planning, knowledge management, and capacity building. In the midterm assessment of progress toward the Strategic Plan implementation conducted in 2014, experts of biodiversity concluded that although there has been progress in a number of areas, the progress is not sufficient to achieve most of the Aichi Targets set for 2020. Sustainable Development Goal 15 of the Agenda 2030 focuses on biodiversity. It is devoted to protecting, restoring, and promoting sustainable use of terrestrial ecosystems and halting biodiversity loss. *See also* ANTI-GLOBALIZATION MOVEMENT; BIOPROSPECTING; SUSTAINABLE DEVELOPMENT GOALS (SDGs).

**CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FLORA AND FAUNA (CITES).** CITES has as its primary goal the protection of species threatened with extinction through a system that classifies them into different categories that afford different levels of protection based on how probable their extinction is. Complete bans on international trade in species and species' parts apply to animal and plants that are recognized as endangered under the convention. The idea for CITES, later known as the **International Union for the Conservation of Nature**, originated at a meeting of the World Conservation Union (IUCN) in 1963. The United States was a key sponsor of CITES, and the text of the agreement was originally agreed to at a meeting in Washington, DC, in 1973. The United States ratified the agreement in 1974, Canada and the United Kingdom in 1975, Germany in 1976, and France and Japan in 1980. Under the rules of CITES, countries are able to formally submit reservations to the listing of species under the various categories found within CITES. CITES, despite controversies related to some specific species, has a broad membership. As of 2017, CITES accorded various levels of protection to approximately 30,000 plants and 5,600 animal species. There were 183 parties to the convention.

**CONVENTION ON INTERNATIONAL TRADE IN HAZARDOUS WASTE (BASEL CONVENTION).** In the late 1980s, the strengthening of environmental controls in industrialized countries led to a sharp increase in the costs associated with hazardous waste disposal. Industries began to ship their hazardous waste to developing countries for cheaper disposal. Destination countries, however, often did not have the capacity to deal properly with the waste. Developing countries and environmental groups began to lobby for an international solution to address this problem. The resulting Basel Convention on International Trade in Hazardous Waste introduced a prior

notification and consent agreement between the shipping and receiving states before a hazardous waste transfer could be allowed. It also set reporting and monitoring requirements of hazardous waste imports and exports. As of 2018, 187 countries are party to the Basel Convention. The **United States** has signed but not ratified the agreement.

Environmental NGOs and some developing countries have argued that the legalization of international hazardous waste trade through the Basel Convention is inappropriate and an international **environmental justice** matter. They have pushed for an amendment to the convention that would fully ban the transfer of hazardous waste from OECD members to least developed countries (the Basel ban). The Basel ban has not received enough signatures to enter into force, but the European Union has adopted the aims of the Basel ban in its Waste Shipment Regulation.

**CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION (CLRTAP).** In the mid-1970s the Soviet Union joined **Sweden** and **Norway** in calling for action on transboundary air pollution. This unusual coalition brought together downwind victims of air pollution. The Soviet Union was a net recipient of air pollutants emanating from its neighbors to the west, especially from **Poland, Czechoslovakia, Germany, Hungary,** and **Finland**. Although the Soviet leadership was not very concerned about **acid rain** as an environmental matter, they saw it as a useful issue through which to promote their East-West detente initiative. Thus, under the initiatives of Scandinavia and the Soviet Union, efforts began under the auspices of the United Nations Economic Commission for Europe to establish CLRTAP.

CLRTAP was the first international agreement of its kind to deal with air pollution in a regional area. It called upon states to reduce their transboundary air pollution as much as was economically feasible, report on their efforts to control emissions, and cooperate on research and acid rain monitoring. All major western European states, the former Soviet Union and many of its satellite states, the European Community, **Canada,** and the **United States** signed the convention in 1979, which entered into force in 1983. Presently, it has 51 parties and has been extended by eight protocols that outline specific actions to be taken in order to cut a range of air pollutants (sulfur dioxide, nitrogen oxides, non-methane volatile organic compounds, ammonia, lead, cadmium, mercury, dioxins/furans, polycyclic aromatic hydrocarbons, and hexachlorobenzene).

**CONVENTION ON THE PROTECTION OF THE ALPS.** Also known as “the Alpine Convention,” this 1991 convention aims to achieve sustainable development and environmental protection in the Alpine region. It entered into force in March 1995.

**COSTA RICA.** While concentrated soil and forest conservation efforts originated in Costa Rica in the early 1900s, for most of the 20th century concern over environmental destruction was limited to a vocal but very small group of agronomists. During the mid-1970s, a campaign to establish and expand the **national parks** system as a way of combating deforestation and growing threats to the country’s diverse wildlife population began to spur broader public discussion and discontent concerning the country’s environmental problems. At the same time, Costa Rica’s first environmental nongovernmental organizations (NGOs) began to be formed, providing important organizational and networking avenues for environmental advocates. The movement took on deforestation, air and water pollution, and destructive development projects.

In the late 1980s and early 1990s, environmentalism became institutionalized in the political realm under the administration of Oscar Arias, which implemented a number of important environmental policy initiatives, established a new environment ministry, and set a goal of becoming carbon neutral by 2021. In few countries has the green movement been as successful in pressuring the government to adopt conservation policies as in Costa Rica. More than 25 percent of its national territory is now a national park or protected land, and the country is sustained largely by ecotourism. About 98 percent of its electricity derives from **renewable energy** sources (primarily hydro, but also solar, geothermal, and wind). Costa Rica has become a model of successful environmental conservation. However, the country is still facing challenges in combating poachers and illicit hunting activities, including illegal shark finning and raiding the nests of endangered leatherback sea turtles for eggs, a delicacy in Asia.

**CRADLE-TO-CRADLE DESIGN.** Cradle-to-cradle design conceives of material flows in our societies as a closed system. It seeks to *upcycle* materials, by maintaining and enhancing materials quality and productivity. Goods are produced to fulfill the needs they are created for, while supporting ecological and social systems. The invention of the phrase *cradle to cradle* is attributed to Walter Sahel, cofounder of the Product-Life Institute in Geneva. William McDonough and Michael Braungart developed a cradle-to-cradle design framework in their two books, *Cradle to Cradle: Remaking the Way We Make Things* (2002) and *The Upcycle: Beyond Sustainability—Designing for Abundance* (2013). Cradle to Cradle Design is a registered trademark of

McDonough Braungart Design Chemistry consultants, who created the Cradle to Cradle Products Innovation Institute in 2012 to take over the certification of products along the framework. The 2015 EU Action Plan on **Circular Economy** refers to cradle-to-cradle principles. *See also* CIRCULAR ECONOMY.

**CYPRUS GREEN PARTY.** The Cyprus Green Party was created in February 1996. While it only received 1 percent of the vote in the May 1996 national parliamentary elections, in the December 1996 municipal elections, the party succeeded in electing its first council member in Nicosia, the capital. The Cyprus Green Party campaigned on ending the Turkish occupation of Cyprus, protecting the Akamas peninsula, and dealing with the country's water shortages and traffic congestion. The party gained its first national member of parliament (MP) in the 2001 parliamentary election after winning 2 percent of the vote. It repeated its performance in the May 2006 parliamentary elections, and in the 2011 parliamentary election earned 2.25 percent of the vote. Also, one mayor, three municipal councilors, and one local councilor in Cyprus are members of the party. In the 2016 election, the percentage increased to 4.81, and the party earned two seats.

**CZECHOSLOVAKIA.** Until 1989, prior to the Velvet Revolution that destroyed the communist regime, Czechoslovakia was under the influence and control of the Soviet Union. The possibility of an autonomous green movement and green political organizations was severely constrained. The pattern of damage to the environment was similar to that of other countries in Eastern Europe, as environmental protection was accorded a much lower priority than economic development, and there were few or no opportunities for interest groups and other political organizations to influence this ordering. Several organizations were formed, most notably Brontosaurus, but they were only tolerated if they were connected to the Communist Party. Later, activists opposed to the regime used these organizations to push for change.

The communist regime enacted some laws to protect the environment, notably the 1967 Practical Measures against the Pollution of the Atmosphere. Although the law included penalties for polluters, they were ineffectual. Following the collapse of communism, more stringent measures modeled after those proposed by international organizations such as the World Health Organization and the European Union (EU) were introduced.

The **polluter pays principle** was reaffirmed, and new **sustainable development** policies were developed, such as the General Environmental Law and General Act on the Environment enacted in 1992. Other landmark legislation included the 1991 Clean Air Act and the 1992 Act on Environmental Impact Assessment.

The rise and decline of Czechoslovakia's Green Party was linked as much to the rapid political changes that occurred from 1989 onward as to concern about damage to the environment. Formed in November 1989, the party was closely associated with the displacement of the communist regime. Its program for reforms focused primarily on the political system and democratic change, rather than on the environment.

The connections between the new party and environmental organizations were slight. A very large proportion of the members of the new party had never belonged to environmental associations. These organizations had often been anything but subservient to the communist regime and included groups such as Brontosaurus, the Czech Union of Nature Protectionists, and the Slovak Union of Protectionists of Nature and the Countryside. In addition, many activists used them as a platform for opposing the communist government.

The formation of the Green Party in Prague was followed by the creation of green political organizations throughout the country. In February 1990, over 300 delegates attended the inaugural national congress of the new party. The fragmentation of the new political organization reflected divisions between ethnic groups and the difficulty that has confronted many other green parties in reconciling a focus on national politics with an emphasis on grass-roots.

Divisions within the nation were mirrored in the structure of parliamentary representation. Elections to the two chambers of the federal assembly were structured along the following lines: in the Chamber of People, seats were allocated according to a ratio of the Czech and Slovak population; of the 150 seats in the Chamber of Nations, half went to the Czechs and half to the Slovaks. Elections were also held to the Czech National Council and the Slovak National Council. The electoral system was structured to include both an element of proportional representation and one of multimember constituencies. There was one important rider: in the federal assembly and the Czech National Council, seats would only be allocated to parties that secured 5 percent of the vote; for the Slovak National Council, the hurdle was only 3 percent. In the June 1990 elections to all of these bodies, the Green Party did not fulfill its promise. It polled only 3.3 and 2.9 percent of the vote for the two assemblies, 4.1 percent in the election to the Czech National Council, and 3.5 percent (and six seats) in the Slovak National Council.

The focus on how to reinforce the rapid changes in the political system by developing the economy rapidly eclipsed the environment as an electoral issue. The inherent weakness of the Green Party and its slight connection with environmental groups made it ineffectual in mobilizing a large number of potential voters. In local elections in November 1990 the Green Party, on average, did not perform much better than it had in June of that year. It did quite well, however, in areas that had suffered high levels of damage to the

environment. In order to compete in the 1992 elections and overcome electoral hurdles, the Green Party, representing primarily Czechs and Moravians, joined the Liberal Social Union, which included the Socialist and Agrarian Parties. From then on, the party split into various groupings and suffered further decline. To make matters worse, a large proportion of the Green Party had been opposed to the coalition with the Agrarian Party. The latter was in favor of cooperative agriculture, which, in the eyes of many, had been largely responsible for immense damage to the landscape. For many environmentalists, the Agrarian Party was too left wing in orientation.

A further difficulty for the Green Party, as well as other parties, was the tension between the Czechs and Slovaks. The Slovak wing of the party ran in the 1992 elections on its own and secured 2.5 and 2.1 percent of the vote for the federal assembly and Slovak National Council, respectively. The Liberal Social Union polled 6 and 6.5 percent in the federal assembly and Czech National Council, respectively. Although several green deputies were thereby elected to these assemblies, the Green Party lost most of its members because of the coalition it had formed with other parties. Moreover, it was harmed by internal conflicts, its loose and deficient organizational structure, and the dominance of non-environmental questions on the political agenda.

The most significant of these issues was the nationalist tension between Czechs and Slovaks, which culminated in the division of the country into the **Czech Republic** and **Slovakia** on 1 January 1993. Other issues included the revival of the economy and, beginning in 1992, social problems such as unemployment, crime, and poverty. While the prospects for the Green Party were bleak, the possibilities for reforms in environmental policy were greatly enhanced following the transition from communism.

**CZECH REPUBLIC.** Formed on 1 January 1993, the Czech Republic joined the European Union in May 2004. The Czech Republic Parliament is among the first in Eastern Europe to have a green party. The Czech Republic has suffered from severe air pollution, particularly in the Black Triangle region where the borders of **Poland**, **Germany**, and the Czech Republic come together. Coal mining and heavy industry were concentrated in this region, and the resulting environmental destruction made this one of the most polluted places on the planet.

With such severe environmental problems in parts of the country, many environmental groups were formed in the years immediately after the collapse of communism. Environmental concerns, however, gave way to economic ones as the Czech Republic struggled through the transition process. Many of these groups subsequently disbanded. Much of the environmental activism in the Czech Republic is now at the local level. The environmental groups working there are faced with a shortage of funds and personnel and a public whose primary focus is on other matters. Importantly, the environ-

mental nongovernmental organizations (NGOs) now working in the Czech Republic do seem to be accepted by the state and are increasingly being incorporated into local decision-making committees.

The Czech Green Party (Strana zelených) was formed in 1990. It won three seats in Parliament when it ran in coalition with other parties in the 1992 election. As in much of the environmental movement, the party had a difficult time through the remainder of the decade. It did not run in the 1996 general elections, but it did join the European Federation of Green Parties in 1997, and reorganized itself on a regional basis in 1999. The party won one seat in the 2000 regional elections.

After the Czech Green Party appealed to environmental organizations to work with it to improve its chances of election to office, it won seats in local councils in Prague, Brno, and Northern Bohemia. Jaromir Stetina was the first Green Party representative to be elected to the Senate in November 2004. The party gained two more local council seats in South Moravia in 2004.

The June 2006 elections were a turning point in the party's fortunes. In the elections, the Greens won 6 seats to the lower house of the Czech Parliament, 447 seats in local councilor elections, and 6 regional seats in the Prague city council. As the election produced no majority winner, and the minority government of the rightist Civic Democrats failed to win a confidence vote in October, on 9 January 2007 Czech president Vaclav Havel named a new government led by rightist prime minister Mirek Topolánek and including the centrist Christian Democrats, the Green Party, and the rightist Civic Democrats. Martin Bursik, the Green Party chairman, became environment minister and one of four deputy prime ministers. Several other ministerial posts went to the Green Party as well.

Since 2010, the Greens have failed to be elected to the lower house of Parliament. They have done somewhat better in the Senate, winning one seat separately and one seat together with Pirate and Christian Democrats in 2012, winning one seat together with the Social Democrats in 2014, and winning one seat alone, one seat together with the Christian Democrats, and one seat with the Pirates and the Local Prague Movement HPP11 in 2016. *See also* AUSTRIA; CZECHOSLOVAKIA.





# D

**DALY, HERMAN.** *See* STEADY-STATE ECONOMY; STEWARDSHIP.

**DEBT-FOR-NATURE SWAPS.** Thomas Lovejoy, a U.S. biologist, came up with the *debt-for-nature swap* concept in 1984; he suggested that less developed and wealthy nations might come to the following arrangement: rather than repay part of their national debt to the developed nations, the developing nations would spend an agreed-upon sum on conservation measures or social programs. Under this arrangement, a nongovernmental organization (NGO) purchases the debt of an emerging nation at a large discount. The elimination of the debt is followed by an arrangement between the NGO and the emerging nation to ensure that the latter preserves a certain portion of land. In 2006, the **Nature Conservancy** facilitated an agreement between the U.S. and Guatemalan governments. The U.S. government forgave \$24 million in debt; this amount was instead to be invested in forest conservation in Guatemala over 15 years. Similar agreements have been reached with African countries. In February 2018, the Leonardo DiCaprio Foundation entered into a debt-for-nature agreement with the Republic of Seychelles. As a result of the agreement, the Seychelles Conservation and Climate Adaptation Trust will invest in ocean conservation projects. *See also* CONSERVATION INTERNATIONAL; WORLD WIDE FUND FOR NATURE (WWF).

**DECENTRALIZATION.** *See* “A BLUEPRINT FOR SURVIVAL”.

**DEEP ECOLOGY.** Norwegian philosopher Arne Naess differentiated between “deep” and “shallow” ecology in 1972: The term *shallow ecology* is used to refer to campaigns against pollution and the depletion of resources that have as their principal objective “the health and affluence of people in developed countries.” The term *deep ecology* suggests a fundamentalist approach or a concern with **spirituality** in relating to the environment. In addition, as Naess formulated it, it focuses on the intrinsic value of nature. It attempts to posit a non-anthropocentric approach, an ideal in which nature is valued for its own sake, and it renounces the idea that human beings are

located in but separate from the environment. As in **biocentrism**, the focus is on the possibility of unity with nature and the dangers associated with attempts by human beings to conquer the environment.

Naess develops the notion of “biospherical egalitarianism” to open a debate on how we should coexist with other forms of life and avoid killing, exploiting, and suppressing them. He links these ideas to the question of **quality of life** and of how, in overcrowded environments, humans and mammals suffer from neuroses, aggression, and the loss of traditions. He evokes the principles of diversity and symbiosis to support preserving all species and argues for the principle of “live and let live” to replace the conventional principle of “either you or me” derived from arguments about the survival of the fittest. Deep ecology promotes diversity in all spheres of activity, including the economic, cultural, and occupational. This appears to be consistent with Naess’s advocacy of autonomy and decentralization.

Although there have been many variations on Naess’s model of deep ecology, his core ideas introduced issues that have remained central to discussions about the core principles and practices that the green movement should adopt in its efforts to transform social practices. Among the many objections to the deep ecology approach is the argument that any attempt to posit non-anthropocentric values is still based on attempts by human beings to devise or formulate values. Nonetheless, deep ecology has been influential in changing perceptions about the values attached to the nonhuman natural environment and how it might be preserved and protected through the efforts of the green movement and its sympathizers. *See also* “A BLUEPRINT FOR SURVIVAL”.

**DEEPWATER HORIZON OIL SPILL.** An explosion on the Deepwater Horizon oil rig operated by BP (British Petroleum) in the Gulf of Mexico on 20 April 2010 led to the largest oil spill in history. Crude oil gushed out of the damaged well for 87 days before it could finally be capped. An estimated 780,000 cubic meters of crude oil polluted the gulf, causing extensive environmental damage. The spill ranks as the largest in history and required an immense cleanup effort. BP has had to pay tens of billions of dollars in criminal and civil settlement claims. In July 2015, the **United States** fined BP \$20.8 billion. *See also* *EXXON VALDEZ*.

**DEFENDERS OF WILDLIFE.** Founded in 1947 as Defenders of Fur Bearers, the organization’s name was changed as its mission expanded to focus on the preservation of not only wildlife but also habitat and **biodiversity**. As of 2016, over 1.2 million members, donors, and activists supported the United States-based organization. It works for wildlife **conservation** through campaigns, legislative initiatives, and on-the-ground activities.

**DE GROENEN.** *See* NETHERLANDS.

**DE GRØNNE.** *See* DENMARK.

**DEGROWTH.** Social ecology, human ecology, and ecological economics are the main roots of this concept. Degrowth is based on the assumption that it is important to achieve a socially sustainable and equitable reduction of society's production and consumption, increase in human well-being, and enhancement of ecological conditions and equity on the Earth. Degrowth is tightly linked to political, economic, and social movements striving for just and democratic transitions to smaller economies with less production and consumption.

*Degrowth* comes from the French *décroissance*. The notion of degrowth originated in the mid-1930s with the critical publication of Jacques Ellul and Bernard Charbonneau in which they called for the "revolution of civilization." This revolution should bring about a major change in the structure of society, away from productivity and individualism, toward quality of life and solidarity. J. S. Mill and W. S. Jevons had already talked about a similar concept in their works in the 19th century. The publication of *The Limits to Growth* by the **Club of Rome** generated renewed attention to the idea.

The development of this concept could be an alternative to the self-reinforcing triangle of *more* instead of *better* production, *private* rather than *public* investment in *man-made* rather than *natural* capital. It can also be a response in view of the failure of current dominating economic-political systems, like capitalism, socialism, and social-liberalism, which endorse constant growth.

From an economic perspective, degrowth supporters argue that growth is not the solution but a part of the problem. It implies physical degrowth or downsizing economic throughput measured by material and energy flows. From an environmental perspective, the degrowth movement calls for reducing material and energy consumption, especially in high-consumption regions. From a social perspective, it supports social relations where quality of life and cooperation are more valued than competition, and economic-centered worldviews are abandoned for social justice. The degrowth movement also calls for disassociation from consumerism, reduction of time allocated to labor, better selection of technical innovation, and relocalization of economic activities.

Degrowth activists support the degrowth strategies at all possible levels: international, national, regional, and local. Examples of such actions include the support for institutional transformation, such as financial markets and global financial institutions, common action toward **climate change** mitigation, work-sharing solutions, the introduction of progressive taxes, as well as

minimum and maximum incomes. The main criticism of the degrowth focuses on its lack of social and political feasibility. However, some argue that it is not only a concept but also a politically radical project that offers a new story.

An online platform was established at the end of the 2000s for sharing knowledge and experience (Degrowth.org), and every other year since 2008, it has organized thematic conferences. Intellectuals who have put forward the degrowth concept include mainly Nicholas Georgescu-Roegen, Jean Baudrillard, Serge Latouche, **André Gorz**, René Passet, Edward Goldsmith, Howard T. Odum, Dennis Meadows, **Ernst Schumacher**, and Ivan Illich.

**DEINDUSTRIALIZATION.** A common theme in writings by leaders of the green movement has been the problems associated with industrial society. This has led some to propose a radical shift away from industrialization, which is seen as inevitably destroying nature, toward deindustrialization, preventing the pillage of the environment.

Edward Goldsmith most explicitly developed this theme. His book *The Great U-Turn: De-Industrializing Society* opposes all efforts to build cities, factories, highways, and airports. Goldsmith also draws a distinction between the “real” world, which comprises the world of living things, or the biosphere, and the “surrogate” world, which causes forest destruction, soil erosion, and pollution and toxic waste. Goldsmith’s proposals represent a radical response to the findings of studies such as *The Limits to Growth*, which points to the limits of resources available for maintaining lifestyles in affluent societies.

Writers such as Ted Trainer also advance the argument for deindustrialization. In *Abandon Affluence!* he argues that the Western way of life is unsustainable and contributes directly to poverty in less developed countries. In sum, he argues for the “dedevelopment” of wealthy nations in order to ensure that resources are redistributed to the poor and that the economic system can be reshaped in order to meet their needs. However, arguments about deindustrialization have not been widely accepted or promoted by the green movement. *See also* DEGROWTH.

**DENMARK.** Denmark is widely considered to be among the most environmentally progressive states in Europe. Nevertheless, the Danish greens, De Grønne, remained a small party from 1983 until it was dissolved in December 2014. De Grønne first competed in local elections in 1985, attracting 2.8 percent of the vote and gaining 12 seats on municipal councils and 6 on provincial councils. In the 1987 and 1988 national elections, it attracted only 1.3 percent of the vote, and in the 1990 elections, only 0.9 percent, insufficient to enter Parliament, where 2 percent of the vote was required for gain-

ing seats. The relatively weak performance by De Grønne was partly attributable to competition from other minor parties that had championed the goals of various new social movements in the 1970s. Another explanation is that other parties, notably the Socialistisk Folkeparti (Socialist People's Party), had already shown a keen interest in environmental issues. Furthermore, unlike some of its neighbors, Denmark did not have a nuclear power program.

Because of the challenges for a new party to enter the Danish political scene, De Grønne decided in 1996 to join a coalition (Demokratisk Fornyelse or Democratic Renewal) of other parties opposed to the European Union (EU). This coalition received sufficient signatures to run in the national parliamentary election, but the coalition did not do well. De Grønne failed to get sufficient signatures to enter the 2001 and the 2005 elections.

The party did not fare well at the local level, either. Of the two seats the party had in 1998, it lost one after the party's votes dropped by 0.1 percent to 4.7 percent and the other one after the Green representative resigned.

In the 2005 European parliamentary election, the party ran candidates for the June Movement and the People's Movement against EU, which together received approximately 23 percent of the vote (4 of 16 seats). Because of its alliance with the People's Movement against the EU, the European Green Party expelled De Grønne in 2008. Instead, Socialistisk Folkeparti has been granted membership in the **European Green Party**. In the June 2019 election, Socialistisk Folkeparti gained 7.7 percent of the vote, lower than its high point of 13 percent in 2007 but substantially better than the 4.2 percent it received in 2015.

The Red-Green Alliance (Enhedslisten–De Rød-Grønne), an ecosocialist party calling for green politics, social equality, and peace that first took part in parliamentary elections in 1990 also won 6.9 percent of the vote, or 13 of the 179 seats in Parliament (*Folketinget*) in the 2019 election. Denmark is a leader in renewable energy consumption in Europe, already obtaining well over half of its electricity from renewable sources. After forming a minority government in 2019, the social democratic government set a target for the country to reduce its carbon dioxide emissions by 70 percent of 1990 levels by 2030, one of the most ambitious **climate change** targets in the world. The target had previously been 40 percent.

**DIE GRÜNEN.** *See* GERMANY, FEDERAL REPUBLIC OF.

**DIE GRÜNEN–DIE GRÜNE ALTERNATIVE.** *See* AUSTRIA.

**DIRECT DEMOCRACY.** The term *direct democracy*, or *grassroots democracy*, is widely used by green political groups to distinguish their practices from those of traditional political organizations. The latter are seen as autocratic or promoting representative rather than participatory democracy. The focus on direct democracy in green parties reflects the interest among fundamentalists to retain the spontaneous character of the social movements from which they emerged and remain accountable to the grassroots of the organization. Direct democracy is seen as a means of preventing the emergence of a strong bureaucratic and professional culture in green political organizations. It also exhibits the enduring skepticism of many activists about involvement in conventional political action and parliamentary politics.

Among the most notable efforts to put direct or grassroots democracy into practice have been those of the fundamentalists in **Germany's** Die Grünen to limit the tenure of parliamentary delegates by rotating them out of office and to ensure that representatives remained directly accountable to the membership, in effect allowing members to dismiss them from their offices.

The latter principle is often referred to as the *imperative mandate*. Green political organizations have constantly had to decide between their efforts to ensure greater accountability to the membership and the need to develop a higher degree of competence and professionalism to deal with the complex processes and decisions that arise in parliamentary politics.

Apart from the principle of rotation and the imperative mandate, green political organizations have attempted to promote direct democracy by trying to maintain close links with social movements, convening meetings that are open to all members of a political organization, and advocating consensus rather than majority voting on important issues. Another manifestation of the emphasis on direct democracy has been the granting to local and regional groups within green political organizations of a large measure of autonomy to draw up party programs, follow their own procedures for internal organization, and manage their financial affairs. There is a convergence here with notions of decentralization. The notion of direct democracy has also been used to bolster campaigns by green political organizations against the accumulation of offices, patronage, and corruption in parliamentary politics. See also "A BLUEPRINT FOR SURVIVAL".

**DUBOS, RENE (1901–1983).** Born in France, Rene Dubos worked as a biologist and philosopher in the **United States**. Renowned as the creator of the expression "think globally, act locally," Dubos is coauthor, with Barbara Ward, of *Only One Earth*. This highly influential book, which took issue with the development path pursued by advanced industrialized market economies, contributed to the shaping of the policy agenda of the United Nations, which had commissioned the work. A recipient of the Pulitzer Prize, Dubos

wrote extensively on the relationships between human beings and their surroundings; his works include *The Wooing of Earth: New Perspectives on Man's Use of Nature* and *Celebrations of Life*.





# E

**EARTH DAY.** Democratic senator Gaylord Nelson from Wisconsin, an environmental advocate, called for a national teach-in about the environment, an idea that took off and led to an estimated 20 million people participating in the nation's first Earth Day celebration on 22 April 1970. Since then, Earth Day has become an annual celebration. The founders of Earth Day created the Earth Day Network, which works with over 50,000 partners in 192 countries. On Earth Day 2017, thousands of scientists gathered and marched under the banner "The March for Science" in Washington, DC, and around the world in order to protest U.S. president Donald Trump's efforts to question and roll back environmental and **climate change** policies.

**EARTH FIRST!.** The radical environmental group Earth First! was formed in 1980 in the southwestern **United States**. The group has often been compared with and described as more radical than **Greenpeace**. Earth First! was formed as a strong reaction against conventional green groups and their ameliorative approach to environmental issues. Earth First! has espoused **biocentrism** and **deep ecology** as well as an extremely loose organizational structure.

The founders of Earth First! including David Foreman, its unofficial leader, were strongly influenced by the ideas expressed by Edward Abbey in his well-known novel *The Monkey Wrench Gang*. Its fictional characters want to protect nature by engaging in acts of sabotage that involve wrecking equipment and machinery. Earth First! came to the attention of the media and the public in 1981 by scaring the authorities responsible for the Glen Canyon Dam through an imaginative act. They created the illusion of a crack in the wall of the dam by rolling a huge strip of plastic over it. Other actions by some members of the group were less benign and mirrored the ideas of activists Foreman and Bill Haywood, who together edited *Ecodefense: A Field Guide to Monkeywrenching*. The guide promoted "monkeywrenching" (the destruction of machinery and equipment) as part of a campaign to sabotage the infrastructure being used to destroy wilderness areas.

The monkeywrenchers regarded themselves as warriors defending the wilderness from industrial civilization. By striking at companies involved in activities such as logging, they aimed to force them out of business by increasing the costs of equipment repair and insurance premiums.

The absence of organizational structures has left activists unconstrained in pursuing a wide range of approaches to achieving their primary objective, namely, the protection of wilderness areas. Earth First! has repudiated organizational structures to a far greater extent than most environmental groups. There is no formal leader, no leadership structure, and no formal membership. Communication between members is maintained through a magazine that appears about eight times a year, an annual meeting lasting one week, and an annual conference. One indicator of the size of the membership has been the subscription list of the magazine, which by 1990 had 6,000 subscribers plus sales of another 3,000 copies. Following a serious conflict among members in 1990, subscriptions fell to around 3,000.

It is difficult to estimate how many people participate in Earth First! though groups are spread throughout the **United States**. Followings have also developed in Europe, **Canada**, and **Australia**. Although much attention has been directed at some of the violent tactics employed by Earth First! supporters, their actions usually entail accepted forms of campaigning. These include using music and theater to entertain children and raise their awareness of environmental issues as well as standard approaches to lobbying for policy changes.

Like other green political organizations, Earth First! has had to grapple with struggles between its founders, who have been fundamentally committed to deep ecology, and those members who have been concerned about the implications of their actions in terms of social justice and economic welfare. Developments within Earth First! parallel the conflict between fundamentalists and realists in many green political parties. In 1990, David Foreman withdrew from Earth First! on the grounds that the organization had taken on too many economic and social issues. Foreman was also concerned that many members were becoming less enthusiastic about the militant approach: for instance, the spiking of trees. Foreman felt that the focus on social issues damaged the initial and fundamental objective of the organization, namely, to focus above all else on the defense of the Earth. In 1995, there was a split in the organization when Earth First! renounced the use of violence. A new group, **Earth Liberation Front**, then formed.

**EARTH HOUR.** The **WWF (World Wide Fund for Nature/World Wildlife Fund)** initiated Earth Hour to raise awareness of climate protection in Sydney, Australia, in 2007. Once every year, participants around the world switch off lights for an hour to show their support for climate protection. The WWF claims this action as the largest grassroots demonstration to take place

globally for the environment. The number of countries in which people participate had grown to 187 countries as of 2017. The participation by famous landmarks such as the Eiffel Tower in Paris and the Golden Gate Bridge in San Francisco increased the publicity of this campaign.

**EARTH ISLAND INSTITUTE.** Founded in 1982 by **David Brower**, Earth Island Institute provides organizational support to groups working for conservation, preservation, and restoration of the global environment. Earth Island Institute has launched many environmental projects, including **Rainforest Action Network (RAN)**, International Rivers Network, and Urban Habitat. It led one of the largest consumer boycotts ever, which led to the requirement that all tuna be caught so as not to harm dolphins, also known as *dolphin safe*.

**EARTHJUSTICE.** In 1965, the **Sierra Club** launched a campaign to save the Mineral King Valley in the Sierra Nevada from becoming a ski resort as planned by Walt Disney Productions. When the organization was unsuccessful at blocking the project through political channels, it filed its first lawsuit in 1969. A San Francisco attorney took the case through to the Supreme Court (1972). Although the Sierra Club technically lost the case, it was allowed to return to the lower courts to try again. In the meantime, Disney chose to pull out of the project, and environmental groups won confirmation of their right to seek review of environmental disputes in the courts. Two of the volunteer attorneys who worked on this case (Don Harris and Fred Fisher) established the Sierra Club Legal Defense Fund in 1971. Fully independent of the Sierra Club, this nonprofit public interest law firm has provided free legal representation to citizen groups to protect and enforce U.S. environmental laws. The firm has represented the **Wilderness Society**, **National Audubon Society**, and **Natural Resources Defense Council (NRDC)**, among many others. It changed its name to Earthjustice in 1997 and had 120 lawyers in 2018. The organization filed over 100 lawsuits against the Trump administration's (anti-)environmental policies in 2018.

**EARTH LIBERATION FRONT.** A group of disaffected members of **Earth First!** split off to form Earth Liberation Front. Like Animal Liberation Front, the group is willing to use sabotage to stop activities that harm nature. In its 1997 communiqué, the organization announced its adherence to social and **deep ecology**. It seeks to achieve the collapse of industry and to undermine the state. Earth Liberation Front became the subject of congressional hearings related to eco-terrorism. A documentary film on the organization

and eco-terrorism, *If a Tree Falls: A Story of the Earth Liberation Front*, was released in 2011. The founder, John Hanna, and other Earth Liberation Front members were indicted and served prison time for their actions.

**EARTHRIGHTS INTERNATIONAL (ERI).** ERI is involved in the defense of human rights and the environment in countries where few other organizations can safely operate. ERI works on issues pertaining to human rights and natural resource management in Southeast Asia and the **Amazon**. It organizes human rights and environmental activists around these issues, documents human rights and environmental abuses, and litigates in U.S. courts (under the Alien Tort Claims Act) on behalf of victims in developing countries.

**EARTH SUMMIT.** *See* UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED).

**EAST AFRICA GREEN FEDERATION.** Formed in November 2013 in Kigali, East Africa Green Federation is the conglomerate of the Democratic Green Party of Rwanda, Ecological Party of Uganda, Burundi Green Movement, and Afro-Greens Party of Kenya. The organization is based in Kampala, Uganda. The mission of the East Africa Green Federation is to bring about all necessary political and socioeconomic changes in its member countries in the areas of democracy, rule of law, constitutional governance, fair distribution of national resources, and protection of the environment, and it generally strives for national sustainable political and social-economic development that is inclusive, free, and fair.

**ECOFEMINISM.** As with many other social movements, sections of the feminist movement have developed a strong interest in **ecology**. French feminist Françoise d'Eaubonne coined the term in 1974 in her book *Le Féminisme ou la Mort*. The range of arguments about the connection between the concerns of feminists and the protection and preservation of nature is fairly diverse. Some themes, however, arise quite frequently. They include the assumption by many ecofeminists that women are inherently closer to nature than men. This ties in with arguments, contested within the feminist movement itself, about fundamental traits that can (or cannot) be ascribed to females rather than to males. Some feminist thinkers, such as Carolyn Merchant in her book *The Death of Nature*, have suggested that the distinction in Western societies between culture and nature caused women, who are seen as closer to nature, to be regarded as socially and culturally inferior to men.

Some ecofeminists have employed this argument about the proximity of women to nature to suggest that patriarchy, the control of a disproportionately large share of society by men, lies at the core of the devastation of nature. This argument is similar to that posited in social ecology about hierarchy as the source of environmental destruction. Some ecofeminists consider women to be more likely than any other group to become aligned with efforts to protect the environment. Not surprisingly, other feminists who question suppositions about the role of women and their potential contributions to all areas of social life challenge many of these assumptions.

**ECOLOGICAL FOOTPRINT.** Human activities leave an imprint on nature and consume natural resources. The ecological footprint is a measure of this imprint and is often calculated in relation to an individual, organization, or country. It measures the amount of ecological inputs needed to produce an amount of natural resources (plant-based food and fiber, livestock and fish, forest products, and space [e.g., for urban infrastructure]) consumed and to absorb the waste (such as carbon dioxide emissions) produced. The measure also indicates a city's, state's, or nation's biocapacity, that is, the productivity of its ecological assets. Using this measure, a rough indication of whether, for example, a country's population is living beyond the biocapacity of its own area can be determined. There are numerous ecological-footprint calculators that can be used to measure an individual's ecological footprint (e.g., by measuring the number and distance of airplane flights, distances driven, food consumed, and so forth). *See also* ENVIRONMENTAL JUSTICE; GLOBAL FOOTPRINT NETWORK.

**ECOLOGICAL MODERNIZATION.** This idea, initiated by Martin Jänicke and carried forward by others, including Arthur Mol and Gert Spaargaren, challenges the concept that environmental protection is a barrier to industrial development. On the contrary, stringent environmental protection standards and energy- and resource-efficiency requirements save companies and economies money and help their competitive performance. Ecological modernization does not challenge capitalist structures or growth models *per se*, but instead calls for the development of economic structures based on sustainability concepts, closed-loop systems, and technologies friendly to the planet.

**ECOLOGY.** Originally a scientific term, *ecology* has been used to describe new political parties and social movements concerned about environmental issues as well as new ways of conceptualizing politics. In *What Is Ecology?* Denis Owen moves from a straightforward definition of ecology as the relationship between plants and animals and the environment in which they live

to an argument about how human activities should not be considered separate from the living world, which is composed of both simple and complex systems of interrelationships. The notion of the connection between human beings and the rest of the living world has been a source of inspiration for supporters and sympathizers of the green movement. Owen states, “The first important lesson to learn is that man is part of nature and that the rest of nature was not put there for man to exploit, the claims of business, political and religious leaders notwithstanding.” *See also* DEEP ECOLOGY.

**ECOSOCIALISM.** This concept forwards a socialistic view on capitalism, expanding criticism of capitalism to encompass its environmentally destructive impacts. Ecosocialists call for a social transformation that would bring human economic structures into harmony with nature. In a number of countries, left-wing parties and green parties have sought red-green alliances.

Left-wing parties from Northern Europe, including **Denmark**, **Sweden**, and Iceland, organized the Nordic Green Left Alliance in the **European Parliament**. In the **Netherlands**, an eco-socialist party and four left-wing parties founded GroenLinks in 1990. There is an eco-socialist group within the Green Party of England and Wales called Green Left, founded in 2005.

**ECOSYSTEM SERVICES.** In an effort to mobilize greater action on biodiversity and ecological conservation, environmental economists developed the concept of ecosystem services. Ecosystem services are the benefits that are derived from ecological systems, such as forests, that house biodiversity, act as a carbon dioxide sink, provide a place of leisure, and offer food and wood. There are many types of ecosystems—oceans, lakes, streams, grasslands, coral reefs, mountains, tundra, deserts—each providing different kinds of “services.” The Millenia Ecosystem Assessment classified ecosystem services into four broad categories: provisioning, regulating, supporting, and cultural. There is a controversy among experts as to whether placing a value on ecosystem services elevates an economic logic over a moral one, and denigrates nature by commodifying it. Others argue that it is precisely the effort to identify ecosystem contributions, in a way that they can be valued, that increases the chances that the importance of ecosystem conservation will be appreciated.

**EGYPT.** As most of Egypt is a desert, its population, which is nearing 100 million, is very densely concentrated along the Nile River, the lifeblood of the country. Population pressures and economic development have combined to create a host of environmental concerns. A small number of environmental groups have formed in Egypt, although as a whole, the environmental movement remains weak, as is the case throughout much of the Arab world.

Groups that have formed include the Association for the Protection of the Environment, which was set up in 1984 and focuses on recycling, waste separation, and composting, and the Centre for Environment and Development for Arab Region and Europe, formed in the mid-1990s and with its headquarters in Cairo.

Egypt's first green party, composed primarily of academics, was established in 1987. The party aims to promote ecological causes. However, it was shut down during the Mubarak administration when it began to attack influential personalities. The party remained ineffective with only one member in the Shura Council. After the Arab Spring in 2011, the party was revived. The party leader, Mohamed Awad, continued promoting a green agenda, including tackling energy shortages from old grids, the damaging health effects of coal pollution, and removing land mines along the northern coast.

**EHRlich, PAUL (1932– )**. Best known for his controversial views on **population growth** and its impact on the environment, Ehrlich is the author of *The Population Bomb*. A biologist who has worked at Stanford University since 1959, his views have always provoked strong reactions, including a fierce debate in the 1970s with another biologist, **Barry Commoner**. *See also* MALTHUS, THOMAS ROBERT (1766–1834).

**EMISSIONS TRADING**. The U.S. Clean Air Act Amendments of 1990 adopted an idea that environmental economists had long advocated: an emissions trading scheme for sulfur dioxide emissions from power plants. The reasoning behind this concept is that firms can more efficiently determine where and how to reduce emissions than a government can through regulating specific technology standards or processes. In an emissions-trading system, a government establishes a cap for total emissions allowed, but then leaves it to industry and the market to determine how emissions cuts are to be made. This is done through a system of emissions allowances (credits) that can be bought and sold. At the start of such a system, firms are either allocated free emissions allowances, or they buy them in an auction. Firms that can do so inexpensively have an incentive to reduce their pollution in order to be able to sell off their allowances. Firms that wish to expand, and thus emit more, must either buy more emissions allowances or make emissions cuts elsewhere in their system. Depending on the design of the system, when a trade occurs, a certain percentage of allowances may be retired from the system. Environmental groups and others have bought up some emissions allowances in order to retire them from the system, thereby driving up the cost of remaining allowances and adding pressures on firms to further reduce their emissions.

This system proved highly successful at reducing sulfur dioxide emissions in the **United States**, although critics question the notion of the right to pollute that the system implies and point out the system's injustice for those who are unfortunate enough to live next to a plant that does not reduce its emissions. In 2005, a group of New England states established its own cap and trade system, the Regional Greenhouse Gas Initiative, for carbon dioxide emissions from the power sector. Its first auction of emissions allowances was held in 2008. In 2007, several western U.S. states and Canadian provinces created another cap and trade system, the Western Climate Initiative, of which California and three Canadian provinces (Ontario, Quebec, and Manitoba) are the remaining members (some states quit the initiative after changes in their governments). The first joint auction between California and Quebec took place in 2014.

The European Union (EU) initially opposed the idea of emissions trading within the **Kyoto Protocol** framework, arguing that emissions cuts should be made domestically. However, the EU turned into a strong supporter later as the costs of and obstacles to fulfilling Kyoto Protocol targets became clear and it gained a better understanding of the emissions trading system. In 2005, the EU launched the world's first international carbon dioxide emissions trading system targeting energy activities. After a brief pilot phase (2005 to 2007), the EU Emissions Trading System (EU ETS) entered its second phase (2008 to 2012), which coincided with the first commitment period of the Kyoto Protocol. During this time, EU member states established national emission-reduction targets for sectors covered by the EU ETS in their national allocation plans as well as for emissions not covered by the system. The ETS has been less successful than its proponents had expected. The main problem is that emissions allowances were allocated based on historical emission levels. Political lobbying by industry led to an over-allocation of emissions allowances, which resulted in a slump in allowance prices and diminished incentives for emitters to reduce their emissions. This has become a structural problem, which has kept the price of allowances too low to have a strong impact. A revised EU ETS has since been introduced covering the period of 2013 to 2020. A single, EU-wide cap was set, and an emissions-allowance auction system has been introduced to replace free allocation. The system has also been extended to cover more sectors. Still, the over-allocation problem continues to trouble the system.

An international cap and trade system with flexible mechanisms, which consist of International Emissions Trading (IET), the Clean Development Mechanism (CDM), and Joint Implementation, was introduced under the Kyoto Protocol. IET allows parties with commitments to trade their assigned-amount units of greenhouse gases. The parties can also acquire tradable carbon credits, which are emissions allowances in carbon dioxide (CO<sub>2</sub>)–equivalent units, from other emissions-reduction actions. “Removal

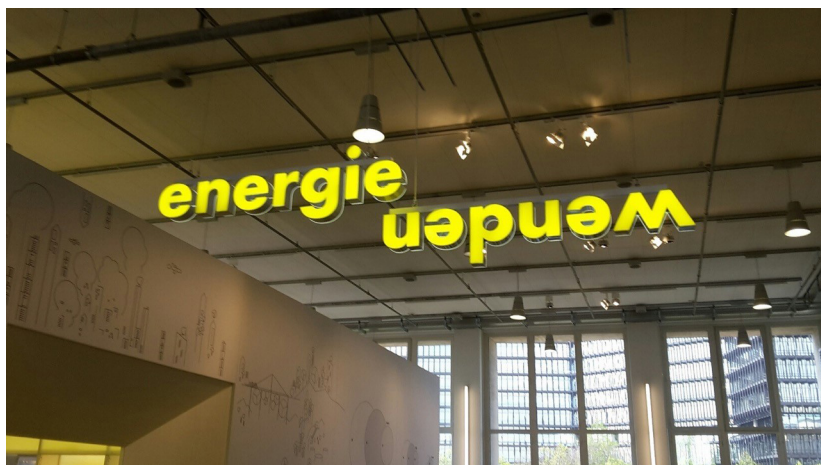


units” can be acquired through land use, land-use change, and forestry activities; emission reduction units can be acquired through Joint Implementation projects with cooperation between parties with commitments; and certified emission reduction (CERs) can be acquired through CDM projects invested in by parties with commitments and implemented in developing countries.

**China** launched seven experimental emissions-trading markets in two provinces and five cities in 2011. In December 2017, it moved to open a national carbon-emissions trading system, which will be the largest in the world. China spent many years studying other emission-trading systems and learning from their successes and mistakes. China has been careful to avoid the problems created by over-allocation that have plagued the EU ETS.

**ENERGIEWENDE (ENERGY TRANSITION).** Energiewende (energy transition) refers to **Germany’s** shift from a nuclear energy and fossil fuels–dependent economy to a **renewable energy** and energy efficiency–based economy. This concept has spread to other European and non-European countries.

The Energiewende concept is rooted in Germany’s 1970s anti-nuclear movement, which put nuclear energy policy at the center of public debate in the following decades. External factors, too, contributed to domestic debates over conventional energy policy, such as the 1973 oil crisis, the Chernobyl nuclear accident in 1986, and the climate change challenge. Parallel to the



**The Energiewenden exhibit at the Deutsches Museum of science and technology in Munich, Germany. Courtesy of Miranda Schreurs.**

transition in perceptions toward conventional energy during these decades, public and private interests and experiments with renewable energies took place.

The 1990s gave a major push for the Energiewende. With controversies over nuclear energy and strong domestic support for Germany's taking a leading role on **climate change**, renewable energy was given a strong boost. Under the coalition government of the Social Democratic Party and Green Party (Bündnis90/Die Grünen) from 1998 to 2005, the Energiewende made strong progress. The coalition passed legislation calling for phasing out nuclear energy and promoting renewable energy with a feed-in tariff.

The Energiewende concept has continued to hold a central role in German energy policy. After the **Fukushima nuclear disaster** in Japan in March 2011, there was strong pressure on the government to speed up the nuclear energy phase-out, with a new deadline of 2022. The German government has aimed at reducing its greenhouse gas emissions to 40 percent of 1990 levels by 2020 and 80 to 95 percent by 2050. In the meantime, however, the government had to concede that they will widely miss the target. Pressured by environmentalists, Chancellor Angela Merkel established a climate cabinet in 2019 to determine measures to bring about deeper emission cuts.

The Energiewende foresees not only a shift in energy sources, but also substantive political, economic, and social change. Unlike the centralized, corporate-dominated, and fossil fuels-based energy system of the past, the Energiewende promotes energy production and consumption with a mix of individuals, communities, and other associations in a more decentralized and market-based system than previously. The Energiewende challenges traditional perceptions of energy consumption and production, ownership, profit making, and lifestyles.

In 2018, the German Parliament established the Commission for Growth, Structural Change, and Employment (more commonly known as the Coal Commission). The commission was led by Stanislaw Tillich (CDU, former minister president of Saxony, a lignite mining area); Matthias Platzeck (SPD, former minister president of Brandenburg); Barbara Praetorius (an academic-climate economist); and Ronald Pofalla (CDU, former chief of the Chancellery and now board member at Deutsche Bahn). The commission also included representatives from 8 federal ministries; 6 federal states (North Rhine-Westphalia, Saxony, Brandenburg, Saxony-Anhalt, Lower Saxony, and Saarland); 3 members of parliament; and 24 more members (citizens' groups, business representatives, local representatives, environmental groups). The commission was to represent a broad spectrum of stakeholders and to prepare an advisory report for the government.

The commission's final report was released in February 2019. With just one negative vote, the report signals a compromise plan for a total phase-out of coal by 2038, with a possible earlier phase-out by 2035. It is similar to a

small Marshall Plan for affected regions. The plan will affect the 20,000 employees working in the lignite-mining sector and the 12,000 employees working in the coal-mining sector. The plan is to gradually phase out coal-fired power plants. By 2022, 12.5 gigawatts of coal (including at least 3.1 gigawatts of lignite) are to be removed from service. By 2030, no more than 17 gigawatts should still be in use. The transition will not be cheap but is essential if Germany is to return to its position as a climate leader. The plan is to invest about 40 billion euro (about US\$45 billion) in the impacted regions. Government offices are also to be shifted to the affected areas—accounting for about 5,000 jobs. According to the plan, there will also be payments to industry for premature shutdowns, with older plants receiving smaller compensation payments than newer ones.

This Energiewende is not without obstacles, such as the emergence of local opposition to renewable-energy projects, the still limited ability to store electricity produce from renewables, and the limited progress on making a transition in the transport sector. The phase-out of coal will certainly meet with some opposition as well. Overcoming technological barriers as well as developing socioeconomic transitions to ease the threat of job losses in the conventional-energy workforce will be crucial for the Energiewende's success.

**ENVIRONMENTAL DEFENSE FUND (EDF).** One of the big-ten environmental organizations in the **United States**, Environmental Defense Fund was founded in 1967 and has a membership of over a million. The group has its origins in efforts that began in New York State to stop the use of DDT to kill mosquitoes because of its adverse impacts on ospreys' and other birds' eggs. The group eventually went national after successfully suing the U.S. government to ban the use of DDT in the United States. It then took up other campaigns, such as the protection of whales and the phase-out of ozone-depleting **chlorofluorocarbons (CFCs)**. The EDF sees its mission as preserving the natural systems on which all life depends. It has a strong focus on issues of **environmental justice**, especially in the United States. Its campaigns currently focus on **climate change**, oceans, ecosystems, and health.

**ENVIRONMENTAL JUSTICE.** There are inherent conflicts of interest that arise in relation to economic development and environmental protection. These include conflicts among different groups within a society, different generations, and different nations. Which groups are forced to live with the most serious pollution problems associated with development and industrialization? Which groups benefit the most from expenditures for environmental protection, and who is asked to pay the cost of protective or remedial meas-

ures? Is it fair for rich countries that polluted during their own development to expect developing countries at early stages in their economic development to cut harmful emissions to protect the global environment?

The foundations of the environmental-justice movement go back to the civil rights movements of the 1950s, 1960s, and 1970s in the **United States** that called for the empowerment and fair and equitable treatment of peoples of color. The civil rights movement brought several important elements to the environmental-justice movement, the most important being experience with direct action and a perception that the distribution of environmental hazards was not the result of chance or “neutral” decisions, but rather a product of the dominant social and economic structures of society. Also important to the rise of the environmental-justice movement were the protest movements that arose in the 1970s and 1980s against toxic pollution. One example is **Love Canal**, a residential area built on top of a toxic-waste dump that was evacuated when President Jimmy Carter declared it a disaster area. The “antitoxics movement” also shared with the civil rights movement a belief that inequity could only be addressed if larger social and economic structures were confronted, and especially the power of corporate America. A milestone event in the environmental-justice movement was a series of protests in 1982 against the state of North Carolina’s decision to locate a polychlorinated biphenyl (PCB) disposal landfill in Warren County, a poor and predominantly black community. The protests stimulated studies into the associations between environmental risks and population distribution by socioeconomic status and race, issues that had been neglected by the mainstream environmental groups in the United States.

Remarkably, the idea of environmental justice (and environmental racism) only arrived at the highest political levels in the 1990s when a group of scholars brought it to the attention of William Reilly, head of the Environmental Protection Agency (EPA). Their studies showed a disproportionate pollution impact on minority populations. This led to the establishment of the Working Group on Environmental Equity in 1993, which became the Office of Environmental Justice. The next year, in June, President Bill Clinton signed an executive order on environmental justice, bringing an unprecedented level of political attention to the issue and acknowledging the need to “focus Federal attention on the environmental and human health conditions in minority communities and low-income communities with the goal of achieving environmental justice.”

Many of the types of environmental-justice concerns in the United States can be found in other societies where there are multiple racial and ethnic communities and class divisions. Environmental- and social-justice movements are emerging in nations around the world. Examples include the protests of the Ogoni people in **Nigeria** against pollution caused by the multinational oil company Shell, which was drilling in their community; the protests

of citizens in Koko, Nigeria, against the dumping of hazardous waste from Italy in their backyards; and the protests of the Penang in Sarawak, Malaysia, against the logging of their tribal forests.

The concepts of the environmental-justice movement are increasingly being applied at the international level as well. International environmental problems first began to attract serious attention in the early 1970s. At the time of the first **United Nations Conference on the Human Environment (UNCHE)** in Stockholm in 1972, there was much attention on the global population explosion. Rich countries tended to have lower **population growth** rates than developing countries. Calls by the rich nations to slow population growth for the protection of the planet, however, were lambasted by some developing countries as being inherently unjust, as it was the high-consumption lifestyles of the rich countries that were causing the real strains on the planet. Certainly, energy and resource consumption by individuals in rich countries is many times greater than that of individuals in the **People's Republic of China, India**, or elsewhere in the developing world.

**Climate change** negotiations have drawn great attention to issues of international environmental equity. Many developing countries have called upon the rich countries, which to date have been the largest producers of greenhouse gases, to take responsibility for addressing the problem and to provide technology and financial transfers to developing countries to help abate their growing emissions. There are also sovereignty concerns in play, such as issues of biological preservation. Developing countries that have some of the richest biological diversity in the world have questioned the equity of demands placed upon them by richer countries to preserve their forests, as much of the original deforestation in developing countries occurred during colonial times, and rich nations exploited their own forests during their own early industrialization. These concerns were behind the development of the **Convention on Biological Diversity** and its associated Cartagena Protocol on Biosafety.

The political theorist John Rawls was among the earliest to focus attention on intergenerational equity, justice, and the rights of future generations. While there has been considerable debate on the question of whether or not rights can be assigned to individuals who do not yet exist, there is general agreement that we have an "obligation" to protect the world's natural resources. The **Brundtland Commission's** 1987 report, *Our Common Future*, called upon nations to promote **sustainable development** in order to ensure the long-term survival of the human species and to afford future generations the same opportunities that current generations enjoy.

Finally, there is a gender perspective related to environmental justice. The United Nations Development Programme (UNDP) has argued that environmental pollution and natural resource degradation tend to affect women more harshly than men since, in many societies, it is women who are responsible

for collecting firewood and water, which in many places are in scarce supply. Women must travel long distances to find these basic necessities. It is also women who tend to be primary caretakers of the young and the old, and so they are often most aware of the effects of pollution on human health. Thus, promoting sustainable development can also improve the lot of women.

Yet, in many societies, women have traditionally had a limited voice in policy formulation. Recognizing this and identifying it as a major challenge to effective environmental-policy formulation and implementation, the 1992 **United Nations Conference on Environment and Development (UNCED)** formulated a plan of action for sustainable development known as **Agenda 21**. One chapter of Agenda 21 was specifically about the importance of enhancing the role of women in environmental decision making. *See also* BIODIVERSITY; ECOFEMINISM; GREENHOUSE EFFECT.

**ENVIRONMENTAL LAW INSTITUTE.** The Environmental Law Institute offers information services, advice, publications, training courses, seminars, research programs, and policy recommendations to engage and empower environmental leaders.

**ENVIRONMENTAL PARTNERSHIP ASSOCIATION.** This consortium of six foundations from **Bulgaria, the Czech Republic, Hungary, Poland, Romania, and Slovakia** support community-based projects to protect the environment and support local communities and society. **Norway** and the Swiss Confederation finance them.

**ESTONIA.** The Estonian Green Movement (EGM) was formed in 1988 to protest the Soviet Union's plans to mine phosphorite along the country's northeast coast; it was one of the first independent popular political movements under Soviet rule in Estonia. In 1989, EGM joined **Friends of the Earth**, registered as a political party, and joined the Coordination of European Green Parties. The EGM split in 1989, with the more politically minded members forming the Estonian Green Party. Although weakened by the split, the EGM won 8 seats (out of 105) in the first multiparty election to the Estonian Supreme Council in 1990. One of its deputies, Arnold Ruutel, was nominated to be chairman of the High Supreme Council, and the chairman of the party, Tomaas Frey, became environment minister.

As has been the case in so many other transition states, the EGM did not do well as the country entered the hard years of political and economic transition, losing ground to major political parties. In the 1992 election, it received only 2.6 percent of the vote (one seat in the Riigikogu [Parliament]). In 1992, the EGM and the Estonian Green Party merged to form the Estonian Greens (Erakond Eestima Rohelised). Since then, the party has not done

well, failing to meet the requirements (such as having 1,000 members) to run as a party in parliamentary elections. It lost its party registration after the 1998 elections and has since functioned as a nongovernmental organization (NGO). It has performed slightly better at the local level, where it has had a few representatives elected to local councils. After Estonia joined the European Union (EU) in May 2004, the Estonian Greens succeeded in gaining enough new members to reregister as a party. In the 2007 parliamentary election, they earned 7.2 percent of the vote and sent six Greens to the Riigikogu. However, the party lost its seats in the following election (2011) and could not send any members to the Riigikogu after the 2015 election. In the March 2019 parliamentary election, the party again failed to win any seats.

**EUROPEAN FEDERATION OF GREEN PARTIES–EUROPEAN FREE ALLIANCE.** *See* THE GREENS–EUROPEAN FREE ALLIANCE.

**EUROPEAN GREEN PARTY.** At its fourth party congress held in Rome, Italy, in 2004, the European Federation of Green Parties decided to form the European Green Party. Reflecting the democratization of much of central and parts of eastern Europe post-1990, the European Green Party had 37 full-member parties from 32 countries in 2019: Partia e Gjelber (Albania), Verds D’Andorra (Andorra), Die Grünen (Austria), Ecolo and Groen (Belgium), Zelena Partija Bulgaria and Zelenite (Bulgaria), Cyprus Green Party, Strana Zelenych (Czech Republic), Socialistisk Folkeparti/SF (Denmark), Eestimaa Rohelised (Estonia), Vihreät—De Gröna (Finland), Europe Ecologie—Les Verts/EELV (France), Sakartvelo’s mtsvaneta partia (Georgia), Bündnis 90/Die Grünen (Germany), Oicologoi-Prasinoi/Ecologist Greens (Greece), Lehet Más a Politika (Hungary), Comhoantas Glas (Ireland), Federazione dei Verdi (Italy), Latvijas Zala Partija (Latvia), Dei Greng (Luxembourg), Alternattiva Demokratika (Malta), Partidul Verde Ecologist (Moldova), De Groenen and Groenlinks (Netherlands), Miljøpartiet De Grønne (Norway), Zieloni (Poland), Partido Ecologista “Os Verdes” (Portugal), Partidul Verde (Romania), Stranka mladih—Zeleni Evrope/SMS-Zeleni (Slovenia), Iniciativa per Catalunya Verds and EQUO (Spain), Miljøpartiet de Grøna (Sweden), Grüne/Les Verts/I Verdi (Switzerland), Partija Zelenykh Ukrainy (Ukraine), and the Green Party of England and Wales and the Scottish Green Party (the United Kingdom). In addition, there are four associate-member parties: Azərbaycan Yaşllar Partiyası (Azerbaijan), Bielaruskaja Partyja “Zialonye” (Belarus), GROZA (Russia), and Green Russia (Russia). The three candidate-member parties were: ORaH (Croatia), Democratic Renewal of Macedonia (Macedonia), and Yeşiller ve Sol Gelecek Partisi (Turkey).

In an effort to establish a common vision, at the second Congress of the European Green Party in Geneva in October 2006, an agreement was reached on a substantive set of policies that all member parties will base their plans on. Called a Green Future for Europe, the agreement opens with a preamble lamenting the problems facing the European Union (EU). These include the failure of the EU Constitution, declining budgetary support for the EU project, and a democratic deficit in EU decision making that leaves many citizens feeling as if they have little voice in the shaping of policies that govern them. The agreement suggests that many of these problems are tied to the drive for economic globalization that does not pay adequate attention to the needs of the people and promotes unsustainable lifestyles.

The agreement supports the EU as an international project for peace and human rights. It also calls upon the EU to become a model for a sustainable future, a safeguard of the European social model, and a supporter of consumer rights, health, and a green economy. The agreement does not reject globalization, but rather calls for a just globalization that stands for democracy, diversity, equality, and the rule of law. It also calls for a strengthening of the role of the **European Parliament** by, among other things, granting the right to legislative initiative and allocating a percentage of seats (e.g., 10 percent) in the parliament to pan-European parties.

The 2006 Action Plan for the European Green Party (adopted in October 2005) focused on the need to work on strengthening the political position of green parties throughout Europe after a number of important defeats. These defeats included the *no* votes to referendums in France and the Netherlands on the EU Constitution and the loss of green representation in national governments.

There have been some disagreements about whether to support or refuse the European Union among member parties. In 2008, the European Green Party expelled De Grønne, a Danish green party, because the party was opposed to the EU and aligned itself with a political association called People's Movement against the EU. *See also* THE GREENS–EUROPEAN FREE ALLIANCE.

**EUROPEAN PARLIAMENT.** In 1979, when the first elections to the European Parliament were held, the green movement had only recently begun to make an impact on the political agenda, and none of the new green parties were successful in gaining seats. In 1984, green parties succeeded in capturing 12 seats. The dominant group in what came to be known as the Green-Alternative European Link was from the Federal Republic of **Germany**, with seven delegates from Die Grünen. The **Netherlands** and **Belgium** each had two representatives, and **Italy** had one.



In 1989, green parties achieved their best ever results in elections to the European Parliament, gaining 32 seats. Although Die Grünen acquired eight of these seats, it was no longer the dominant group. There were 9 delegates from **France**, 7 from Italy, 3 from Belgium, and 2 from the Netherlands. **Portugal, Spain, and Denmark** had 1 each. Although among the most successful green parties in terms of share of the national vote, the **United Kingdom**'s Green Party gained no seats because of the constraints imposed by the electoral system in that country. In 1994, environmental issues were less prominent on the political agenda than they had been in 1989, when Europe was focused on assisting central and eastern European accession states in transforming their economies and polities. As a result, there was a decline in the green parties' share of the European Parliament vote, and only 22 candidates were successful. Unlike most other green political parties, Bündnis 90/Die Grünen improved on its previous performance and once again emerged as the most powerful group, with 12 seats. Italy had 3 representatives, Belgium had 2, and the Netherlands, Denmark, and **Luxembourg** each had 1. The Danish delegate was not the representative of a green party. However, her party, the Socialist People's Party, became part of the Green Group in the European Parliament in 1992.

In the 1999 election, the newly formed **Greens-European Free Alliance** (The Greens/EFA) won 48 of 626 seats. This time, France's Les Verts sent the largest number of delegates (9), followed by 7 each from Belgium and Germany; 6 from the United Kingdom; 4 each from Spain and the Netherlands; and 2 each from **Austria, Finland, Ireland, Italy, and Sweden**. After the 2004 election, the Greens/EFA had 42 seats.

The ambivalence that characterized many green parties' approach to parliamentary politics, especially prior to the 1990s, influenced their attitudes toward the European Community/European Union (EU) and the relationships among various green parties. After the 1984 congress of green parties held at Liege in Belgium, they advocated a "Europe of the regions." This corresponded to their emphasis on decentralization and autonomy and arguments against hierarchical forms of governance. Green parties have also regarded with suspicion the development of large, centralized bureaucracies. Issues that united green parties in their early years included their opposition to any attempts to achieve greater central control and coherence of the military, their focus on the arms race, the goal of environmental protection, and advocating the rights of women and minority groups.

Some of the divisions that prevailed at the national level manifested themselves at transnational meetings. During their first term in office, between 1984 and 1989, most members of Die Grünen refused to follow the rotation-in-office principle, as it would undermine their efforts to gain and make use of their newly acquired expertise in operating within the political system. Green delegates also disagreed about the value of working in the institutions

of the European Community: whether to attempt, in a pragmatic manner, to transform the institutions (to make them more transparent and accountable) or to refuse to change fundamentally flawed structures. There are strong parallels here with the division in green parties between realists and fundamentalists.

Further conflict arose between members of Die Grünen (who wanted to promote both environmental protection and traditional left-wing themes such as social justice and democratization) and other green parliamentarians (who wanted to focus on environmental issues). Following the 1989 elections, these conflicts intensified with the election of delegates from countries such as France and Italy, who were able to challenge the dominance of the German representatives. There were also serious divisions among the latter over how they should implement forms of **direct democracy** and the question of the professionalization of politics.

As a result of these conflicts, the Green-Alternative European Link was dissolved, and in July 1989 a new association called the Green Group, supported by 29 green parliamentarians, emerged in the European Parliament. This group focused much more on environmental policy than on attempts to promote both environmentalism and a left-wing agenda. In the period following the **United Nations Conference on Environment and Development (UNCED)** and the Maastricht Treaty establishing the EU in 1993, efforts to establish a common program for the green parties in Europe intensified. The **European Federation of Green Parties** was formed in 1993, and the **European Green Party** a decade later.

While some national green parties remain opposed to all or parts of the European experiment, including the euro and the European Constitution, for many their focus is on how to “green” the agenda and workings of the EU. The focus is on such values as grassroots democracy, sustainability, environmental protection, citizen rights, and gender equality. In February 2005, at an extraordinary Council Meeting of the European Green Party, a majority of 51 representatives supported the EU Constitution. The seven votes against it came from Miljöpartiet de Gröna (Sweden), De Grønne (Denmark), Miljøpartiet De Grønne (**Norway**), and the Ecologist Greens (**Greece**). The reason for their support of the European Constitution was that it would provide greater transparency and that the EU could play a positive role in reaching the party’s goals of social justice, ecologically **sustainable development**, peace, and European democracy.

The European Green Party–European Free Alliance’s campaigns within the parliament address such issues as stopping **climate change** through policies to address airline emissions; energy strategy; biomass and biofuels; automobile pollution; food culture (greening trade, anti–genetically modified organisms); chemicals (promoting a nontoxic world); and preservation of the European social model. In the 2009 European Parliament elections, the alli-

ance of Greens/EFA won 57 seats (7.44 percent) of the vote. In 2014, they dropped to 50 seats and 6.66 percent of the vote. Besides their environmental-related policies, the Greens/EFA have concerned themselves with the European refugee crisis.

**EUROPEAN UNION.** The European Union has emerged as a leader in global environmental policymaking in many areas. Formerly known as the European Steel and Coal Commission, then the European Economic Community, and finally the European Community, the European Union was established by the Maastricht Treaty in 1992. It has become increasingly active in environmental politics, establishing ambitious goals for renewable energy development, greenhouse gas emission reductions, reduction in the use of plastics, and promotion of a circular economy.

Initial efforts to harmonize environmental laws among member states was primarily done in the interest of creating a more balanced environment for trade. With time, the importance of environmental protection for **quality of life** as well as quality of the environment has gained in importance. The European Union has embraced concepts such as **ecological modernization**, a **circular economy**, and sustainable development.

European Union environmental framework directives set policy goals and guidelines for member states. Important directives include the Habitats Directive on the conservation of natural habitats and wild fauna and flora; the Birds Directive, which protects bird habitats; the Renewable Energy Directive, which promotes renewable energy production and consumption; the Energy Efficiency Directive, which requires improvements to energy efficiency; the Packaging and Packaging Waste Directive, which is intended to reduce the production of packing and its recycling; the **EU Water Framework Directive**, which establishes a framework for community action on water policy; the Marine Strategy Framework Directive; and the Floods Directive. European Union environmental regulations must be transferred to member state national laws. The 28 member states of the European Union (possibly to become 27 if Brexit proceeds as planned for October 2019) differ in their positions on many environmental matters, but they have nevertheless shown how countries can cooperate to reach environmental goals. The European Union often leads the world in pushing for greater attention to pressing global issues, including **biodiversity** loss, overfishing, **climate change**, consumption-related pollution, and **plastic pollution** in the ocean.

Policymaking in the European Union is by process of negotiation among member states. The European Commission plays an important role in developing environmental policy proposals, and the European Parliament can amend or veto them. The European Council, where heads of state meet, and the European Council of Environment Ministers tend to establish broad policy directions and priorities. Some of the most controversial current issues are

the speed at which coal production and consumption should be stopped and whether nuclear energy should be abandoned or promoted. Conservative voices in the European Union argue that the EU risks economic troubles if it moves too quickly on environmental matters when other countries are not taking action. Progressive voices argue that the European Union can influence global developments by taking a leadership role and that the seriousness of the global environmental crisis leaves no time for delay. See also EUROPEAN GREEN PARTY; EUROPEAN PARLIAMENT; EUROPEAN UNION COVENANT OF MAYORS; EUROPEAN UNION EMISSION TRADING SYSTEM (EU ETS); EUROPEAN UNION WATER FRAMEWORK DIRECTIVE (WFD); THE GREENS–EUROPEAN FREE ALLIANCE.

**EUROPEAN UNION COVENANT OF MAYORS.** The European Commission formed the EU Covenant of Mayors in 2008 after the adoption of the 2020 EU Climate and Energy Package, setting renewable energy, energy efficiency, and greenhouse gas reduction targets. Member cities pledged to work to implement and, where possible, go beyond the EU's climate and energy targets. As of April 2019, it has over 7,700 signatories.

**EUROPEAN UNION EMISSION TRADING SYSTEM (EU ETS).** Based on the cap-and-trade principle, the European Union Emission Trading System (EU ETS) was launched in 2005 with the aim to reduce industrial greenhouse gas emissions cost-effectively. The EU ETS was the largest scale emission-trading system in the world, covering around 45 percent of the EU's GHG emissions, until the Chinese launched their carbon emissions trading system. The EU ETS covers more than 11,000 power stations and industrial plants in 31 countries (including the 28 EU states, Iceland, Liechtenstein, and Norway). Focusing on emissions that can be measured, reported, and verified with a high level of accuracy, the ETS covers CO<sub>2</sub> emissions from power plants, energy-intensive industry sectors and commercial airlines, nitrous oxide (N<sub>2</sub>O), and perfluorocarbons (PFCs) from aluminum and other production processes. The ETS has had three phases (2005–2007, 2008–2012, and the current one [2013–2020]) with the focus on harmonized allocation rules for allowances. Responding to the ETS, the International Civil Aviation Organization assembly agreed to develop a global market-based mechanism and to apply it by 2020. The ETS was poorly designed in its first phase, with too many allowances being issued to industrial polluters. As a result, more than a decade later, it is still facing the challenge of how to address the surplus of allowances, which has undermined the orderly functioning of the carbon market by keeping carbon prices so low their impact is

far weaker than originally expected. A structural reform of the carbon market has been introduced, but the basic problem of an overabundance of emission allowances remains. *See also* EMISSIONS TRADING.

**EUROPEAN UNION WATER FRAMEWORK DIRECTIVE (WFD).**

Adopted on 20 October 2000, the EU Water Framework Directive is the short name for Directive 2000/60/EC of the **European Union Parliament** and of the Council, establishing a framework for Community action in the field of water policy. As most EU member states share waters with neighboring countries, the EU and its members have divided river basins and associated coastal areas into 110 river basin districts covering about 60 percent of EU territory. According to the WFD, Europe's water is under pressure: 20 percent of surface water is polluted, and 50 percent of wetlands are endangered. In addition, demand for water is growing while nearly half of the EU population lives in water-stressed countries. The WFD seeks to achieve good ecological and chemical status for waters to protect human health, water supply, natural ecosystems, and biodiversity. The WFD is implemented in six-year recurring cycles. The second cycle started in 2015. The changing environment has created new challenges for water management across the EU as it suffers from more floods and droughts.

**EXTINCTION REBELLION.** A group of activists in the UK formed Extinction Rebellion in October 2018 to protest the lack of government action on climate change. The group has published open letters to explain their cause. Climate change, they argue, threatens the survival of our children. Governments need to take up their responsibility to protect their citizens from this impending disaster and tackle the root causes of the problem—the heavy reliance on fossil fuels. The group has since spread globally like wildfire and opened offices in over 49 countries as of May 2019. They have called for civil disobedience in the form of mass protests, flash mobs, sit-in strikes, and traffic blockages to win media attention to the threat of climate change for human survival. Arguably, their actions, together with those of **Fridays for Future**, were behind the decision of the UK government to declare a **climate change** emergency in 2019.

**EXXON VALDEZ.** On 24 March 1989, more than 10 million gallons of crude oil spilled into the pristine waters of Prince William Sound, Alaska, from the *Exxon Valdez* oil tanker. The accident ranks among the worst oil spills in history and intensified debates about the impacts of oil transportation at sea to the environment as well as debates about the opening-up of protected areas in Alaska to oil drilling. A court decision required Exxon to pay \$500 million in punitive damages (far less than what the state of Alaska

demanded). This came on top of several billion dollars the company paid in cleanup costs and compensation to victims. Four individuals lost their lives in the cleanup efforts. It also is a warning lesson: as Arctic waters open up to shipping as a result of **climate change**, more attention needs to be paid to the hazardous impacts accidents can have. The oil spill had devastating impacts on wildlife as well as to Native American communities dependent on the sound, the tourist industry, and local businesses, including the fisheries industry. Cleanup efforts and lawsuits went on for decades afterward. An immediate impact of the accident, the Oil Pollution Act of 1990, phased out the use of single-hull tankers in U.S. waters. *See also* DEEPWATER HORIZON OIL SPILL.

# F

**FAIR TRADE MOVEMENT.** The fair trade movement is a reaction to the injustices that have accompanied the globalization of capital and trade. In an effort to promote both the economic well-being of small-scale farmers and artisans in developing countries and the use of organic and sustainable agricultural methods, a fair trade movement that includes many greens among it has been gaining in strength since the 1980s. Fair trade works to cut out the middleman and return a greater share of profits from sales to the producer. It is a nonmarket mechanism for promoting social justice, democracy, and environmental protection. It has as its overarching goal the creation of a fairer international trading system and, thus, also works to eliminate agricultural tariffs that have a tendency to keep out products from developing countries. The movement's emphasis is largely on commodities exported from developing to developed countries, and the items are mainly handicrafts, coffee, cocoa, tea, and cotton. In order to build up the fair trade mechanism, organizations such as Fairtrade International, the World Fair Trade Association, and the European Fair Trade Association help provide certificates and labels for small-farmers' products and establish channels to the market. However, considering that currently there is no standardized evaluation in issuing certificates and labels between organizations, which are in oversupply, there are criticisms regarding the effectiveness of the movement.

**FAUNA & FLORA INTERNATIONAL (FFI).** Founded in 1903, the Society for the Preservation of Wild Fauna of the Empire (later renamed the Flora and Fauna Preservation Society and renamed again Fauna and Flora International) was the world's first international wildlife-conservation organization. The society initially focused on protecting fauna in colonized territories. It was backed by both naturalists and hunters who regretted the consequences of their past practices. The association was the first of many endeavors to achieve cooperation in protecting wildlife in Africa. The FFI has been supported by Britain's Queen Elizabeth and continues to work to protect global **biodiversity**. *See also* AFRICAN SPECIAL PROJECT; AFRICAN WILDLIFE.

**FEDERATION OF GREEN PARTIES OF THE AMERICAS.** Established in 1997 with headquarters in Mexico City, the Federation of Green Parties of the Americas has as its goal strengthening the cooperation among the green parties and movements of the region in addressing environmental, human rights, social justice, and peace. At its 19th annual meeting held in Cartagena, Colombia, in November 2018, the group approved a resolution to discuss the Inter-American Environmental Charter and the Proclamation of the Constitution of the Rights of Mother Earth before the Organization of American States. Member parties come from Argentina, Bolivia, **Brazil**, **Canada**, Chile, Colombia, Guatemala, **Mexico**, Nicaragua, Peru, the **United States**, and Venezuela. The Dominican Republic and Guyana are observer parties. Facebook appears to be the main forum for the group's information sharing.

**FEDERATION OF YOUNG EUROPEAN GREENS.** Formed in 1988 in Belgium, the Federation of Young European Greens brings together youth wings of green parties and nongovernmental youth organizations from across Europe. With 42 member organizations as of 2017, the federation has been provided an office in the **European Parliament** by the **European Green Party**.

**FINLAND.** Throughout the 1980s, green groups ran in elections without attaching themselves to a formally constituted green party. Founded in February 1987 by green activists and environmentally oriented members of Parliament, the Green League (Vihreä Liitoo or Vihreät De Gröna) registered as a political party in 1988 and adopted a green manifesto in 1990.

In the mid-1970s, green groups began to run in municipal elections in Helsinki and, in the 1980 elections, gained a seat on the city council. At the 1983 national election, a green list of candidates was put forward and received 1.5 percent of the vote and 2 seats in Parliament. They improved on this in the 1987 national elections, with 4 percent of the vote and 4 seats. In 1991 Vihreä De Gröna secured 6.8 percent of the vote and 10 out of 200 seats. It achieved a similar result in 1995 (6.5 percent and 9 seats). Following this, Vihreä De Gröna joined the coalition cabinet of five political parties led by the Social Democrats and held the environment portfolio. The environment minister, Pekka Haavisto, was the first green parliamentarian ever to hold such a post in the national government. In the 1999 election, Vihreät De Gröna attracted 7.3 percent of the vote (11 seats) and continued in the next coalition government, but resigned after Parliament approved the cabinet's decision to allow the construction of a new nuclear power plant. In 2003, the party's position strengthened slightly to 8 percent (14 seats) but then dropped to 10 seats in the 2011 national election. However, it rebounded to 15 seats in



2015, pulling 8.53 percent of the vote. Four years later, in the April 2019 election, the party did its best ever, winning 20 seats (11.5 percent). At the local level, Vihreät De Gröna gets stronger support. In 2000, the Greens in Helsinki replaced the Social Democratic Party as the second largest party. Although the party lost the spot in 2004, it regained it in 2008 and has maintained it since. The party won 24.1 percent of the vote in the 2017 municipal election. Since joining the European Union (EU) in 1995, Finland has consistently sent green delegates to the **European Parliament**. In 1995, the party obtained one of 16 seats allocated to Finland in the European Parliament (based on the results from the 1991 parliamentary elections) and in October 1996 was again allocated 1 seat, after attracting 7.6 percent of the vote. After both the 1999 and 2004 elections, Vihreä Liitoo was able to send two delegates to Strasbourg, the seat of the European Parliament. In the 2014 election, the Greens pulled 9.3 percent of the vote, and Heidi Hautala, the former minister for international development, became a member of the European Parliament. In the 2019 European Parliament elections, the party could send representatives to Strasbourg. It is a strong supporter of the European Union.

Green political organizations originated in the late 1970s in a variety of social movements preoccupied with environmental issues, including the dangers of nuclear power. Among the major concerns was the preservation of Lake Kojjarvi, a haven for many threatened bird species. Other issues important in mobilizing support for green groups included sulfur emissions and **acid rain** and opposing the development of more nuclear power plants and the wood pulp industry.

Vihreät De Gröna joined the European Green Coordination in 1989. The **European Federation of Green Parties** was formed in Finland in June 1993. A substantial proportion of the party's membership in 1994 was against Finland joining the European Union and the Euro Zone. Nevertheless, Vihreä Liitoo supported the expansion of the EU to the east. It has also supported European tax reform to increase taxes on energy and raw materials in order to reduce income taxes and labor-related costs. The party's statement of principles adopted in 2012 is titled, "Responsibility, Freedom, Caring," and sees the party as safeguarding the future by saving the environment and saving people from misery.

**FOREMAN, DAVID.** See EARTH FIRST!.

**FOSSIL FUEL DIVESTMENT.** *Divestment* refers to selling off holdings, the opposite of *investment*. The fossil fuel divestment movement urges individuals and entities such as universities and retirement funds to divest from fossil fuel industries in order to reduce greenhouse gas emissions. Since the

environmental-campaign group **350.org** started the campaign in 2012, over 749 institutions and 58,000 individuals (2017 data) have pledged to divest a total of over US\$5 trillion. The participating institutions include the Government Pension Fund Global of Norway, the California Public Employees' Retirement System, the California State Teachers' Retirement System, the University of California, and Oxford University. *See also* CLIMATE CHANGE.

**FRACKING.** Hydraulic fracturing, also known as *fracking*, is a technique used to extract gas and oil from shale and other rock formations by drilling horizontally and breaking the rock with a high-pressure mixture of water and chemicals. The drilling makes cracks in the rock so that the gas or oil can flow out through the drilled channel. Fracking has been practiced widely especially in the **United States** and **Canada**, where there are large reserves of this atypical form of gas and oil. Fracking is criticized because of the environmental degradation it causes, especially water contamination and methane release. Some countries that have eagerly pursued fracking, like Poland, have had little success with the technique. Others, like **France** and **Germany** have banned or greatly restricted it out of concern for the impact on ground water and the environment.

In the **United Kingdom**, there have been conflicts between the Conservative government and opposition groups including the Green Party, the Labour Party, and environmental NGOs over fracking. Caroline Lucas, the only green MP in the country, was arrested at a protest against fracking in West Sussex in 2013. While governments in Scotland, Wales, and Northern Ireland have announced they would oppose fracking, the British government has promoted the industry. The government approved fracking in the Lancashire area in 2015 amid protests outside the planned site.

**FRANCE.** The origins of the green movement in France are as diverse as those in many other countries. There is a strong tradition of nature-conservation associations, and in the 1960s, these groups became more politicized as they focused on issues such as the 1967 *Torrey Canyon* disaster (the first major oil disaster that polluted the coast of Brittany in France as well as the shores around Cornwall in England) and government plans to develop Vanoise National Park for commercial gain. The student uprisings of May 1968, which questioned traditional political parties and modes of political behavior, provided further impetus. In the 1970s, a strong **anti-nuclear protest** movement emerged as France became more dependent than almost any other country in the world on this form of energy. In 1977, at the height of these protests, a demonstrator was killed during a rally against the proposed site of a nuclear reactor at Creys-Malville.

One of the earliest attempts by green groups to compete in elections to the National Assembly occurred in 1973, when *Ecologie et Survie* attracted 3.7 percent of the vote. However, in general, green groups fared worse in National Assembly elections than in presidential contests, attracting only 2.2 percent of the assembly vote in 1978 and 1.1 percent in 1982. Since the formation of *Les Verts* in 1984, the greens' fortunes have improved somewhat. In 1993, *Les Verts* and *Generation Ecologie* campaigned together and won 11 percent of the national vote. *Les Verts* received 3.6 percent of national votes cast in the 1997 National Assembly elections (seven seats) and 4.51 percent in 2002 (three seats). The party's image was tainted by the actions of some of its members. In 2005 after considerable criticism, the party expelled Ginette Skandrani, who had participated in a holocaust-denial website.

At the local level, around 270,000 votes were cast for green groups in the 1977 elections, winning them 30 seats on town councils. Due to changes in the electoral system, green groups gained 757 seats in town councils following the 1983 local elections, even though they attracted fewer votes (around 148,000) than in 1977. In 1989, green groups gained nearly twice as many votes as in 1983: 1,369 seats on town councils. These elections were a significant breakthrough in the advance of green politics in France.

At the 1992 regional elections, following the 1990 formation of *Generation Ecologie* as a competing party to *Les Verts* and under the leadership of Brice Lalonde, both parties secured a similar proportion of the vote, 7.1 and 6.8 percent, respectively. Despite important differences in their organizational structure, compounded by the different styles of their leaders, *Les Verts* and *Generation Ecologie* resolved to join forces in the 1993 elections to the legislative assembly and present a single candidate in each constituency. Though the greens secured a respectable 7.6 percent of the vote, they failed to obtain any seats in the National Assembly. Thus, in addition to internal problems, they continued to have difficulty in overcoming the hurdles set by the electoral system. However, in the 1997 elections, they finally succeeded, gaining seven seats in the National Assembly.

Until 1984, green political groups were organized under two umbrella organizations, the *Confederation Ecologiste* and *Les VertsParti Ecologiste*. Other significant groups were the French section of **Friends of the Earth** (*Reseau des Amis de la Terre*), which was founded in 1970; a group called *Ecologie et Survie* (Ecology and Survival), formed in March 1973 in Alsace; and the *Mouvement Ecologique*, which like all the other groups was principally concerned with the expansion of the nuclear industry.

In 1981, Brice Lalonde ran in the presidential elections on a green platform and obtained 1,222,445 votes (3.9 percent). This was a significant improvement on the 337,800 votes (1.3 percent) for Rene Dumont, who as the representative of environmental groups had run in the 1974 elections. The

founding of Les Verts (the Greens) in 1984 was an attempt to unify the diverse green groups. The attempt largely failed. In the 1988 elections, Antoine Waechter gained 1,145,502 votes (3.8 percent).

In 1994, the greens broke with Waechter's policy of political nonalignment ("*ni droite, ni gauche*" [neither right, nor left]), shifting their policies notably to the left. In response, Waechter left Les Verts and formed Mouvement Ecologiste Independant (Movement of Independent Ecologists), a continuation of the persistent tendency toward fragmentation of the green movement.

In 1995, Les Verts supported Dominique Voynet as a presidential candidate. She received 3.8 percent of the vote in the first round. In 1997, Voynet was invited to join the government of Lionel Jospin's Socialist Party and the Communist Party as minister for the environment and regional planning, a post that she held until 2001, when she resigned. She was designated Les Verts' presidential candidate for the 2007 election, where she won 1.57 percent of the vote in the first round. In the 2002 presidential election, Noël Mamère won 5.2 percent of the vote.

Les Verts developed a new strategy to improve the performance of the ecologists in view of the European Parliament election in 2009. An open list was created to gather all ecologists in 2008: it was called Europe Écologie. This European party obtained 2,803,759 votes (16.28 percent) at the national level in the 2009 election, which was beyond all expectations and put the party in third place. With this success and in preparation for the 2012 French presidential elections, a new party was born: Europe Écologie—Les Verts (EELV). The party's first primary election was highly competitive and conflictual. Eva Joly was chosen to represent the party at the presidential elections. Her competitor, TV journalist Nicolas Hulot, failed to offer his public support to her candidacy. Although Joly only obtained 2.31 percent in the first round of votes for the presidency, the new party did quite well in the legislative elections, winning 17 seats in the National Assembly, the lower parliamentary chamber. The party was able to create a parliamentary group both in the Senate and the National Assembly. This victory stands out in comparison to the respective 3 and 4 seats at the National Assembly resulting from the 2002 and 2007 legislative elections respectively. The party owed this victory to the 2010 redistricting of French legislative constituencies and not to an increase in the number of votes. In addition, EELV became a partner of the socialist government of François Hollande, and obtained several ministries. In 2014, after several internal conflicts, the party decided not to participate in the new government led by the Prime Minister Manuel Valls. This decision was at the center of strong divisions within the party and behind the departure of the president of the ecologist group at the Senate and the copresident of the ecologist group at the National Assembly. EELV received 6.81 percent of the votes at the first ballot of the 2015 regional

elections, half of what it had received in the 2010 regional elections. In the 2017 presidential election, Yannick Jadot, the candidate elected in the primary voting of EELV, withdrew his candidacy and endorsed Benoît Hamon, the socialist party candidate. EELV voters approved their alliance. The 2017 election was the first presidential election without a green candidate since 1969.

Illustrating slowly changing perspectives on European citizenship, in the 1999 election for the European Parliament, the leader of the party's list, Daniel Cohn-Bendit, was a noncitizen. Admittedly, he had been an active deputy in the European Parliament since 1994, but as a member of Die Grünen. Taking advantage of the European Parliament election laws that make it possible for a citizen of any member state to run for election to the European Parliament from anywhere in the EU, Cohn-Bendit ran as a noncitizen (albeit a well-known face in France since his days as a student leader of the protests that rocked the country in the late 1960s) at the top of Les Verts' list.

Support for Les Verts has come largely from young people and those employed in the academic sector, as well as from managers and white-collar employees who have acquired high levels of formal education. Structurally, Les Verts is decentralized, and regional groups enjoy a high level of autonomy. As in many other green parties, members have shown distrust of leading personalities in the party, and several of these figures have had to make way for others.

Autonomy, solidarity, and **ecology** are key principles in the platform of Les Verts. They embrace the central green themes of protection and preservation of "life" in the face of advanced industrial society's fundamental threats to the existence of human beings, plants, and animals. Les Verts have also presented an alternative economic program that explores the possibilities for work-sharing schemes in order to address the problem of unemployment; a **guaranteed minimum income**; and greater control of the economy by workers. There has also been an emphasis on cooperation with less developed countries and on peace and disarmament. Like other green parties, Les Verts has adopted **nonviolence** and civil disobedience as alternatives to conventional approaches to security.

By contrast, Génération Écologie adopted policies that could be regarded as antagonistic to Les Verts. Brice Lalonde supported the efforts of the West in the Gulf War. In addition, his group has given far less emphasis, at least initially, to participatory democracy. Many of the supporters of Génération Écologie came from the Socialist Party, and the tendency was to create an organization that resembled the dominant parties rather than one that articulated the style and objectives of new social movements.

As in Germany, the green parties have recently also begun to adopt a more pragmatic approach. Apart from appreciating the gains made by *Génération Écologie*, they have realized that the state of the environment, although not displacing the economy as the major preoccupation of voters, does concern most people and could be linked to dissatisfaction with the political system as a whole. In 2014, the EELV was divided on whether to cooperate with the ruling Socialist Party or with the *Front de gauche* (left front) in view of the upcoming elections. The leftist drift of the party justified several public departures from the party.

Thus, despite the many efforts at enhanced unity, various green parties and groups persist with seats in the National Assembly, Senate, or regional councils. After the 2017 elections, these included: *Europe Écologie Les Verts* (Europe Ecology-the Greens founded in November 2010 from the merger of *Les Verts* and *Europe Écologie* [it has one seat in the National Assembly and three in the Senate]); *Écologistes!* (Ecologist Party, founded in September 2015 when it split from *Europe Écologie Les Verts* [it has three seats in the National Assembly, one in the Senate, and one in regional councils]); *Génération écologie* (Generation Ecology, formed in 1990); *Mouvement Écologiste indépendant* (Independent Ecological Movement, a regional party); *Citoyenneté Action Participation pour le 21ème siècle* (Citizenship, Action, Participation for the 21st Century, founded in 1996 and registered as a political party in 2000 [it has four seats in the National Assembly, one in the European Parliament, and three in regional councils]).

In elections to the **European Parliament**, French green groups have had something of a rollercoaster performance. They attracted 888,134 votes (4.7 percent) in 1979. Partly due to internal disputes, their share of the vote in the 1984 elections dropped to 3.4 percent (680,080 votes). By contrast, they performed well at the 1989 elections, with 10.6 percent of the vote. *Les Verts* became the largest group, with nine delegates, of all the green parties represented in the European Parliament. In the 1995 elections, however, the *Union des Écologistes* and the *Generation Écologie* combined won only 2.95 percent of the vote and as a result had no members of parliament. In the 1999 elections, in contrast, *Les Verts* attracted 9.7 percent of the vote (nine seats). The *Mouvement Écologiste Indépendant* attracted another 1.5 percent, bringing the total green vote to over 11 percent. In 2004, *Les Verts* dropped their number of seats to six after winning a smaller 8.43 percent of the vote. On the highly divisive issue of the European Union (EU) Constitution, *Les Verts* campaigned in favor of ratification. In 2009, *Europe Écologie* earned 16.28 percent, and 14 members of *Europe Écologie* went into the European Parliament (the number increased to 15 as a result of the Lisbon Treaty). In 2014, they saw a sharp drop in support and were only able to send 6 representatives to Strasbourg. In the 2019 election, however, the party surged, becoming the

third largest representing France in the European Parliament with more than 3 million votes (13.48 percent, equating to 13 seats). *See also* DIRECT DEMOCRACY.

**FRANKLIN DAM.** In **Australia**, challenges to the institutional order by green groups rose in the late 1960s and had gained in intensity by the late 1970s, notably in the form of social movements such as the one opposed to the construction of a proposed hydroelectric power dam in Tasmania. The campaign against the Franklin Dam, waged between 1979 and 1983, is one of the most striking examples of a rise in popular awareness of environmental problems and of the tensions between central and regional governments. If the changes that occurred during the 1970s in the government's approach to environmental issues were meant to defuse conflicts, they were a failure. In 1983, environmental issues featured prominently in an Australian federal election for the first time.

The question of states' rights, which had preoccupied reformers for decades, now assumed a new significance. The Tasmanian government confronted environmentalists who pleaded for federal intervention and more central regulation of environmental policy. Though the Australian Labor Party (ALP) supported environmentalists against the Franklin Dam, it refused to address the issue of states' rights. In the 1983 federal election, the conservative (Liberal and National) parties stood for the individual state's right to set its own environmental policy. The Liberal government sought to avoid confrontation by offering the Tasmanian government US\$500 million for the construction of a coal-fired thermal power plant instead of the dam. When this offer was refused, the ALP announced that it would oppose the construction of the dam if it were elected. The party offered help to the Tasmanian government to diversify the methods of electricity production and to expand the tourist industry in order to create employment. These policies were crucial in attracting green votes in the 1983 election.

Once elected, the ALP government offered the Tasmanian Liberal government alternative schemes for creating employment. The rejection of this offer led the federal government to use existing legislation to override states' rights. This decision has been interpreted as a major extension of the powers of the federal government. Still, the ALP government was reluctant to clash with state governments and finally came to an arrangement with the Tasmanian government, offering it compensation for money spent on the Franklin Dam project before it was halted and alternative employment programs, as well as subsidizing the supply of energy.

Though the ALP had sided with the green movement over the Franklin Dam, it was initially unable to respond to growing expectations of a more decisive environmental policy. It remained uncertain about taking sides between established interests, which favored development and the exploitation

of states' resources, and the new green movements. Over time, the question of states' rights appeared to become less important than the long-term social and economic implications of environmental protection.

The Tasmanian Wilderness Society, later renamed the **Wilderness Society**, emerged from this campaign and provided a basis for getting the environment onto the national political agenda. The radicalism of the Wilderness Society epitomized the new generation of environmentalists engaged in political activities. The campaign against the Franklin Dam also created new opportunities for coalitions between environmental groups that included the **Australian Conservation Foundation (ACF)**, state conservation councils, **national parks** associations, and 70 branches of the Wilderness Society. It rallied the support of around 800 conservation groups with up to half a million members. Environmentalists were successful in attracting media attention by inviting international figures such as David Bellamy to participate in their campaign. The arrest of 1,340 activists between January and March 1983 attracted widespread attention and accelerated the ascent of the green movement in Australia.

**FRIDAYS FOR FUTURE.** Swedish student Greta Thunberg initiated this international youth movement; she triggered the global movement in August 2018 by sitting in front of the Swedish Riksdag during school hours with a sign that read, "School strike for climate." Her criticism was that her government was not doing enough about climate change to protect her generation. She has demanded that the Swedish and European governments intensify their actions on climate change. Her actions hit a target and inspired students in many countries worldwide to follow her example and to strike. Students boycotted school on Fridays and marched for the climate to protest the lack of serious action on climate change.

**FRIENDS OF THE EARTH.** In 1969 **David Brower**, the executive director of the **Sierra Club** since 1952, parted company with this powerful organization and became the founder of Friends of the Earth. Although Brower had effectively been forced to leave the Sierra Club by members who felt that he was primarily responsible for some of its financial problems, he had been very popular, particularly because of his espousal of a more proactive stance in trying to change public policy. Brower was able to shape Friends of the Earth to attract the growing sections of the population that favored more direct forms of political action than those deployed by well-established environmental groups. Moreover, like the student and other protest movements of that era, Friends of the Earth sought a basis for support that transcended the boundaries of nation-states.



In keeping with the spirit of political involvement and participation by the grassroots, Friends of the Earth gave its established branches in other countries a high degree of autonomy in determining their campaign strategies and internal organization. Following the establishment of its first office in San Francisco, Friends of the Earth installed itself in London and Paris in 1970 and subsequently in most Western democracies. As of 2017, there were 75 national member groups and 5,000 local activist groups in Friends of the Earth International.

Among the issues Friends of the Earth initially raised were wildlife protection, pollution prevention, and **alternative energy** development in forms such as solar power. However, like many other green groups, they took on many additional issues, such as green consumerism, protection of the **ozone layer**, promotion of green trade, global warming, and chemicals. In 1991, the Environmental Policy Institute, which had itself two years earlier merged with the Ocean Institute and the Oceanic Society, merged with Friends of the Earth. In 2005, there was a further merger with Bluewater Network.

In the late 2010s, Friends of the Earth was focusing its campaigns on climate justice and energy, economic justice and resisting neoliberalism, food sovereignty, forests and biodiversity, and human rights.

**FUKUSHIMA NUCLEAR DISASTER, JAPAN.** On 3 March 2011, a level nine earthquake in the Pacific Ocean caused a series of massive tsunami waves that destroyed towns and villages along Japan's northeastern coast. The tsunami also contributed to a series of nuclear accidents at the Fukushima Daiichi Nuclear Power Plant. In **Japan**, the tsunami, earthquake, and nuclear meltdowns are known as the *triple disaster*. Radioactive contamination of the region, as well as in the Pacific Ocean, forced the evacuation of towns and villages surrounding the plant. Many of these areas will remain off limits for decades to come. The hydrogen explosions and core meltdowns of reactors in the Daiichi facility have created a dilemma of massive proportions for the Japanese government. Prior to the explosions, the country was on a path to a large-scale expansion of nuclear energy. The accident forced the shutdown of all 54 nuclear reactors. Despite the government's interest in ramping nuclear power back up to 20 percent of total electricity supply, public opposition has prevented more than a small number of nuclear reactors to be restarted. The cleanup costs of the nuclear accident have already far exceeded the government's initial estimates of \$50 billion. As of early 2018, the Japanese Board of Audit predicted a figure closer to \$200 billion. With considerable uncertainty as to how, technologically, the melted fuel and debris can be removed from the damaged reactors (a process that may last at least three to four decades), cost estimates are difficult.

The event was a turning point for Japanese society. It exposed the gap between official governmental information and real events in the affected and damaged areas. It also revealed the danger embedded in the country's longtime nuclear policy. Finally, the event raised many people's awareness of environmental and political issues.

There has been an anti-nuclear movement in Japan at least since atomic testing in the Bikini Atoll resulted in radiation poisoning of crewmen on the Japanese fishing boat *Daigo Fukuryu Maru*, which was contaminated by nuclear fallout from the Castle Bravo thermonuclear test in 1954. Prior to the Fukushima disaster, however, the anti-nuclear movement was marginalized as a leftist movement and had little real influence on national or local decision makers. As nuclear energy was perceived as a relatively cheap, clean, and efficient energy source, the movement's claims against nuclear power did not receive much attention. The Fukushima incident, however, changed this. Demonstrations were held across Japan against the use of nuclear energy and the government's intention to reactivate nuclear stations after the disaster. The largest and most sustained protests were held in front of the



Inside the evacuation zone surrounding the Fukushima Daiichi Nuclear Power Plant. *Courtesy of Miranda Schreurs.*



**Overgrown buildings inside the Fukushima exclusion zone. Courtesy of Miranda Schreurs.**

prime minister's office in the years immediately after the accident. The government has been pressured to change its energy policy as a result of the disaster.

The heavily damaged nuclear power stations that were shut down for safety tests after the accident remained shut down until new nuclear safety standards could be developed. In the meantime, the nuclear industry has decided to decommission many of the nuclear power plants, as retrofitting the plants would be too costly. The six reactors at the Fukushima Daiichi plant and the four at the Fukushima Dai-ni Power Plant, including reactors that were not damaged, were the first on the list of reactors to be decommissioned. Twelve additional reactors have been put on the list. Other reactors are either still undergoing tests or awaiting approval to be restarted. In July 2018, the Japanese government reiterated its plans to achieve 20 to 22



Photos inside the evacuation zone surrounding the Fukushima Daiichi nuclear facility. *Courtesy of Miranda Schreurs.*



An abandoned home inside the Fukushima evacuation area. *Courtesy of Miranda Schreurs.*





Bags filled with radioactive waste from the Fukushima nuclear accident. *Courtesy of Miranda Schreurs.*



Transporting nuclear waste in Fukushima. *Courtesy of Miranda Schreurs.*

percent nuclear power in the electricity mix by 2030, but this plan could easily fail to materialize, given the public's skepticism toward nuclear energy, the rapid development of renewable energy, the aging of the nuclear facilities, and continued seismic activity along the ring of fire.

The Fukushima nuclear disaster had reverberations across the globe and led to decisions to scale back, phase out, or phase out more rapidly, nuclear power in numerous countries, including **Belgium, France, Germany, Italy, Spain, and Switzerland**. **Taiwan** had planned to shut down its reactors by 2025, but in a November 2018 referendum, after a summer of scorching temperatures, citizens voted against the shutdown, fearing the loss of air-conditioning. *See also* ANTI-NUCLEAR PROTESTS

**FUTURE EARTH.** Future Earth is a global research platform that promotes and coordinates interdisciplinary research on the risks and opportunities of sustainable transformations. Future Earth, a ten-year initiative, was launched at the 2012 United Nations Conference on Sustainable Development (UNCSD) conference (also referred to as **Rio+20**). The coproduction and codesign of knowledge constitute the core principles of the research projects that Future Earth supports. Its vision focuses on the involvement of stakeholders, in particular NGOs and the climate sector, in problem analysis, design of research questions, and exploration of implementable solutions. In order to enhance the uptake of policy-relevant knowledge on global sustainability transformations, Future Earth created a working group on **sustainable development goals**.

**THE FUTURE WE WANT.** The Future We Want is the nonbinding-outcome document of the 2012 **Rio+20** conference. It reinforces past commitments, notes that much more must be done to improve conditions for the nearly one billion people still living in poverty, and calls for measures to be taken to stimulate a transition to a green economy. Recognizing the unease that many developing countries have with the concept of a green economy, with some fearing that this is a form of green neocolonialism, the document emphasizes the importance of a green economy that is in line with the principles of **sustainable development**, including poverty eradication.

# G

**G7/G8/G20 SUMMITS.** Former French president Valéry Giscard d'Estaing and West German chancellor Helmut Schmidt initiated the Group of Seven (G7) in 1975. The G7 comprises seven leading industrialized nations: the **United States**, the **United Kingdom**, **France**, **Italy**, **Japan**, **Canada** (joined in 1976), and **Germany**. **Russia** joined in 1998, forming the G8, but was booted from the group after its invasion of Ukraine in 2014. The European Union also sends representatives to the G7 meetings. The G20 includes the largest twenty economies, meaning that in addition to the G8, **Australia**, Saudi Arabia, **India**, South Africa, **Turkey**, Argentina, **Brazil**, **Mexico**, **China**, **Indonesia**, **South Korea**, and the European Union are members. Together the G7 account for about a quarter of global greenhouse gas emissions, the G8 about 30 percent, and the G20 about 80 percent.

The first meeting of the G7 took place at the time of the first oil crisis and the breakdown of fixed currency-exchange rates. The personal meetings among the heads of state and government serve as a platform for setting the agenda and agreeing on steps forward on issues including the global economy, foreign security, development policy, and environment and climate policy. The first reference to **climate change** in a G7 summit communiqué was in 1979. In 2015, the G7 Summit was held in Schloss Elmau, Germany, and the challenges of climate change were one of the most important items on the agenda. Other items included environmental sustainability, poverty-related diseases, gender equality, and global supply chains. Germany proposed two environment-related initiatives at the G7: expanding **renewable energy** in Africa and establishing climate-risk insurance schemes. The first initiative was to add 10 gigawatts to African renewable-energy capacity (the equivalent of 10 large coal-fired plants) by 2020. The G7 also made a contribution to climate negotiations by providing climate-risk insurance to groups especially at risk from climate change. This initiative aims to increase the number of people covered by climate-risk insurance to 400 million by 2020 and will be implemented in close partnerships among the G7 states, developing countries, and emerging economies. The G7 countries also agreed to support a two-degree Celsius global-warming target. Most importantly, they agreed to

phase out fossil fuel use and to strive for carbon neutrality by the end of this century. The summit communiqué was described as historic, signaling the end of the fossil fuel age and acting as an “important milestone on the road to a new climate deal.” German chancellor Angela Merkel was praised for succeeding in her ambition and efforts in facilitating the climate agenda during the summit. Climate change has also been a frequent topic at G20 meetings. *See also* THE PARIS AGREEMENT.

**GAIA HYPOTHESIS.** The term *Gaia* is derived from the Greek word for Earth. The *Oxford Dictionary* definition of Gaia refers to the Earth “as a self-regulating system in which living matter collectively defines and maintains the conditions for the continuance of life.” **James Lovelock**, a British scientist who worked for the National Aeronautics and Space Administration on a project to discover whether there was life on Mars, has promoted the Gaia hypothesis since the 1970s. Lovelock, in trying to identify the composition of the gases surrounding Mars, began to speculate about the process of maintaining life on Earth. In *Gaia: A New Look at Life on Earth*, Lovelock suggested that “life itself” shapes the composition of the Earth, the atmosphere, and the oceans. He challenged the customary view that “life adapted to the planetary conditions as it and they evolved their separate ways.”

Lovelock acknowledges that his belief in the existence of a complex system that can act as a “single living entity” (Mother Earth) cannot be tested scientifically. Still, his argument, which has attracted considerable interest among some supporters of the green movement, is based on three crucial observations. First, for about 3.5 billion years and despite significant variations in the heat emitted from the sun, there has been very little change in the climate of the Earth. Second, the atmosphere appears to be not so much a biological product but a biological construction: “not living, but like a cat’s fur, a bird’s feathers, or the paper of a wasp’s nest, an extension of a living system designed to maintain a chosen environment.” Third, the atmosphere has appeared to have always been ideal for supporting life on Earth. This, he suggests, must be more than a highly improbable coincidence.

Lovelock therefore defines Gaia “as a complex entity involving the earth’s biosphere, atmosphere, oceans, and soil; the totality constituting a feedback or cybernetic system which seeks an optional physical and chemical environment for life on this planet.” The conclusion by many writers using the Gaia hypothesis is that nature will survive the onslaught on it by human beings. Scientists have largely dismissed Lovelock’s Gaia hypothesis, but he is still appreciated for the debate his work stimulated.



**GENETICALLY MODIFIED ORGANISMS (GMOs).** According to the World Health Organization, genetically modified organisms (GMOs) are defined as organisms, such as plants, animals, and micro-organisms, whose genetic material is altered in a way that does not occur naturally by mating and/or natural recombination. The development of GMOs is mainly meant to create food products with lower prices, greater durability, or higher nutritional value. The other objective of GMOs is to improve crop protection by developing strains resistant to plant diseases caused by insects or viruses, or by increasing tolerance to herbicides.

Many environmental groups are opposed to GMOs. The Slow Food organization lists many reasons for this. GMO crop plants tend to be in large monoculture farms. Many GMO plants are engineered to produce insecticides, which may be harmful to not only insect pests, but also to other insects, including butterflies, moths, and pollinators. One of the biggest debates on GMOs regards intellectual property rights and patenting. Large multinational companies, including Monsanto (which was purchased by Bayer in 2018), Bayer, and Syngenta, DuPont, and Dow control the majority of the seed market. This pushes economic power further into the hands of big business and is a threat to small-scale farmers. Instances of GMO crops contaminating neighboring farms raise concerns about the potential for these farmers to be sued for growing GMO crops they have not paid for. Such problems, it is feared, could exacerbate the technological divide and the unbalanced distribution of risks and benefits between developed and developing countries. Besides the concerns of product safety and development inequality, environmental groups are worried about the potential impacts on **biodiversity** and human health.

**GEOENGINEERING.** Concerns about rapidly rising greenhouse gas emissions or the acidification of the oceans has led some scientists to explore how these trends could be reversed through large-scale interventions into planet-wide systems. Temperatures, for example, could be controlled through large-scale tree-planting efforts, on the one hand, or releasing aerosols into the atmosphere or the use of large-scale mirror systems to reflect incoming solar radiation, on the other. Given the lack of international law to control the use of geoengineering solutions, there are also many concerns as to how such technologies could be misused. Many environmentalists who follow the precautionary principle are skeptical of geoengineering both because research and development of geoengineering solutions could funnel resources away from mitigation efforts and because of potential unforeseen consequences of such large-scale technological solutions. Geoengineering Monitor is a group opposed to geoengineering, arguing that it does nothing to address the root causes of climate change and, rather than improving the climate, could make things worse.

**GEORGIA.** Georgia's Green Party (Sakartvelo's Mtsvaneta Partia) has had a difficult time since its formation in the early 1990s as it has been actively blocked from participation in various local elections. Nevertheless, it has been quite successful. Georgia was less industrialized than many other Soviet republics, but several of its cities, including Tbilisi, Kutaisi, and Rustavi, had some of the worst air pollution of any former Soviet territory. Georgia was also impacted heavily by the **Chernobyl** nuclear accident. The green movement and the Green Party in Georgia played a critical role in adding environmental concerns into the country's evolving democratic institutions. In 1991, the party won a seat in the Supreme Council of Abkhazian Autonomous Republic elections. After the Supreme Council collapsed at the national level in 1991, the State Council was formed, which included members of the Green Party in its Ecological Committee. In the November 1992 parliamentary elections, the Green Party succeeded in sending 11 representatives to Parliament. When in 1993 the Georgian environment minister resigned in protest over the government's ignoring environmental problems, the Green Party used its position in Parliament to pressure for changes. The following year, the Cabinet of Ministers created a new interdepartmental environmental-monitoring program under the Ministry of the Environment.

From 1995 to 1999, the Green Party was part of the Citizens' Union coalition that won the election in 1995 and remained the governing coalition until 2003. It won two seats in Parliament, and a representative of the party was appointed as chairman of the parliamentary committee for environment and natural resource protection.

Since the Georgian Constitution was amended in 1995, article 37 has guaranteed Georgians the right to a healthy environment, obliged the state to protect nature for this and future generations, and required the state to provide timely information on their environmental conditions. Beyond this, the Green Party influenced the development of environmental legislation, including the prohibition of nuclear waste transport or the building of nuclear power plants.

Free and fair elections were not realized until the Rose Revolution in 2003. The local Supreme Council of the Ajarian Autonomous Republic blocked the Green Party from running in the election. The Green Party succeeded in challenging this decision, but it did not win any seats in the 1996 election. In the 1998 local elections, the Greens ran independently. They fielded 3,000 candidates in 205 districts and had 60 victories in 29 of those districts. In the 1999 parliamentary elections, the party ran independently. It claims that as a result of irregularities in the election, it failed to win any seats. It sued the government in Strasbourg over the election. In the 2002 local elections, the Green Party won 0.35 percent but argued that the results had been rigged.

Along with several other parties, it successfully challenged the results in court, resulting in the cancelation of the results. On a recount of the votes, however, the party's fortune did not improve.

While the party did well in the 2003 elections as part of a nine-party coalition under Eduard Shevardnadze that received over 20 percent of the vote, the elections were annulled due to the Rose revolution. The elections were denounced as having been grossly rigged in favor of Eduard Shevardnadze. The main democratic opposition parties demanded Shevardnadze's ouster. There were massive street demonstrations against him as well as some supporting him organized by Shevardnadze. When Parliament nevertheless opened, opposition party representatives with roses in their hands stormed it. A crisis ensued, and eventually Shevardnadze was forced to step down. The Supreme Court of Georgia annulled the election results.

The Green Party won one seat in the 2012 parliamentary elections. The party joined the Georgian Dream coalition of nine parties that united to challenge the governing United National Movement. The Georgian Dream eventually won the majority in the election, the first nonrevolutionary turnover of power in Georgia after the collapse of the Soviet Union. After the 2016 parliamentary election, the Green Party remained allied with the Georgian Dream–led coalition.

**GERMAN DEMOCRATIC REPUBLIC (1945–1990).** In the German Democratic Republic (Deutsche Demokratische Republik [DDR], or East Germany), the catastrophic situation of the environment played a role in the mass protests that led to the downfall of the Berlin Wall in 1989 and subsequently of the DDR regime. Environmental stewardship was written into the East German constitution in 1968, and there were a **national park** system and considerable nature conservation initiatives as well. Nevertheless, with the country's reliance on lignite for heating and industrial activities and the promotion of heavy industry and lax environmental standards, pollution of all kinds plagued much of the east. In 1982, the State Council, disturbed by growing petitions against pollution that made the state apparatus look incompetent, declared pollution information a state secret. Some groups, like the Peace and Environmental Circle in the Berlin-Lichtenberg Church, tied messages of anti-Cold War peace and protection of the environment together. There were strong connections between environmental movements and the churches, which provided the movements with a degree of protection and supported their messages. Other groups, like the Umwelt Bibliothek (Environment Library), which worked out of a basement of the Zion church, illegally distributed environmental information in a newsletter until they were arrested.

The Grüne Partei (Green Party) in the DDR has its roots in the 1988 Green-Ecology Network Arche (Grün-Ökologische Netzwerk Arche). The Grüne Partei was formed on 24 November 1989 and had its first party congress in Halle/Saale on 9 February 1990. On 3 December, the party fused with the West German Die Grünen. The Grüne Partei formed an alliance group with the Independent Women's Association (Unabhängige Frauenverband) to participate in the first free election for the People's Chamber (Volkskammer) held in 1990. They won 2 percent of the vote, giving them eight seats, all of which went to the Grüne Partei. As a result, after the election, the Independent Women's Association pulled out from the alliance. The Grüne Partei then joined with Bündnis 90 (Alliance 90), a separate alliance formed by three non-Communist political groups in East Germany (Neues Forum [New Forum], Demokratie Jetzt [Democracy Now], and the Initiative Frieden and Menschenrechte [Initiative Freedom and Human Rights]), which had gained 2.9 percent of the vote. Various green parties participated in the elections in Brandenburg, Sachsen-Anhalt, Thüringen, Mecklenburg-Vorpommern, and Sachsen in the October 1990 elections, winning between 2.2 percent and 6.5 percent of the vote. The Grüne Partei and the Bündnis formed a joint group. With German unification, this group then agreed to join Die Grünen in West Germany to form Bündnis 90/Die Grünen in 1993.

**GERMANY, FEDERAL REPUBLIC OF.** As in other Western European nations, the predominance of economic development after World War II led to little emphasis on environmental protection as a core component of the national policy agenda. In the Federal Republic of Germany (Bundesrepublik Deutschland [BRD]), or West Germany, the only hint of a change in focus came from the leader of the opposition Social Democratic Party, Willy Brandt. In a 1961 speech, Brandt proclaimed the necessity of turning the sky over the Ruhr River blue again.

It was not until the late 1960s in West Germany that the dominant attention given to economic development began to weaken. The formation of a coalition government between the Social Democratic and the Free Democratic Parties in 1969 was followed by the transfer of control over measures to combat pollution from the Ministry of Health to the Ministry of the Interior.

Historically, the powers to legislate, manage, and regulate the environment have been vested in the states. There is also an enduring tradition in Germany of a legal basis for environmental protection. A key change to the involvement of the states in regulating environmental protection occurred in 1972 in the form of an amendment to the Constitution. This conferred on the federal government the power to enact legislation that, in effect, overrode the states in areas such as air and noise pollution and waste management. In addition, the federal government was able to issue guidelines on the enactment of state

legislation on matters such as water quality and planning as well as the preservation and conservation of nature. Another significant action was the formation of the 1974 Federal Environmental Agency.

Despite these important changes, spurred on by key figures in both parties of the coalition, the predominance of economic considerations in policy making and the decision to expand massively the system of nuclear power plants brought a powerful counter-response. This came in the form of **citizens' initiatives** for environmental protection, **anti-nuclear protests**, and the formation of a green political organization, Die Grünen (the Greens).

In many ways, Die Grünen can be considered the mother of all green parties. While not the first green party to form or to win representation, Die Grünen's impact has extended far beyond the German political landscape. Many green parties from around the world looked to Die Grünen for inspiration. Founded in January 1980 following widespread support for social movements opposed to the development of nuclear power and for green groups running in local and state elections, Die Grünen became the most celebrated manifestation of the upsurge of the green movement in Germany. Its formation as a political party was anything but a smooth process. At the preliminary meeting in Offenbach in October 1979 divisions emerged over issues such as dual membership in Die Grünen and other political parties, the focus on grassroots citizens' initiatives, electoral politics, and whether to adopt a conservative or socialist agenda. Prior to the formation of Die Grünen as a federal party, a coalition of green groups, *Sonstige Politische Vereinigung: Die Grünen* (Alternative Political Association: The Greens), had polled 3.2 percent in elections to the European Parliament (June 1979), and a green group in Bremen, *Bunte Liste* (Multicolored List), had for the first time secured seats in a state parliament (four seats and 5.1 percent of the vote).

Among the most influential people in the early stages of the formation of Die Grünen were Herbert Gruhl, a former Christian Democrat and member of parliament (MP); **Petra Kelly**, who had been active in protests against the Vietnam War in the **United States**; Rudi Dutschke, a leading radical intellectual in the West German student revolt in the 1960s; and **Rudolf Bahro**, a dissident intellectual who had been expelled from East Germany.

Die Grünen's performance in federal elections improved progressively in the 1980s, from a shaky start in the 1980 elections (1.5 percent) to 5.6 percent of the vote and 27 seats in 1983 and 8.3 percent and 42 seats in 1987. Their success was bolstered by the increasing concern over **acid rain**, the destruction of forests, the quality of air and water, and the Chernobyl nuclear accident. By the mid-1980s, following Die Grünen's sequence of successes in regional and national elections, traditional (conservative, liberal, and socialist) political organizations, trade unions, and business groups began to

realize that a fundamental shift in values and priorities was occurring. Even if economic considerations were still predominant, the environment was now widely regarded as a crucial issue in political deliberations.

Die Grünen, which had opposed reunification and had failed to form a coalition with its eastern counterparts, suffered a setback in the special 1990 federal elections, when it won only 4.8 percent of the vote, failing to pass the 5 percent hurdle needed to enter the Bundestag. In this election, the “old” West German territories functioned as one electoral area and the “new” East German regions were treated as a second electoral district. To enter Parliament, 5 percent of the vote was needed in the respective electoral region. Bündnis 90 won 6.2 percent of the vote in the new East German electoral region. The West German greens were thus dependent on the East German greens for representation at the federal level. After this, the realists, who in the 1980s had already entered coalitions with the Social Democrats in states such as Hesse, began to gain the upper hand and remove some of the restrictions placed by the fundamentalists upon tenure of office and styles of political negotiation adopted by parliamentary delegates. This trend was reinforced by the decision to form a coalition with Bündnis 90, which also espoused a pragmatic approach to parliamentary politics.

When after unification Bündnis 90/Die Grünen merged out of the green parties of the German Democratic Republic and Die Grünen in the Federal Republic of Germany, there were many issues that needed to be resolved. Bündnis 90 and Die Grünen had some common interests (gender equality, nature conservation), but they differed in their priorities and styles. Despite their growing pains, Bündnis 90/Die Grünen performed well in the 1994 federal elections, attracting 7.3 percent of the vote and 49 seats. Its success was doubly significant. It displaced the Free Democrats (which gained 47 seats) as the third largest party and made an unprecedented recovery. No other party in the Federal Republic of Germany had previously succeeded in overcoming its complete exclusion from Parliament (following an electoral defeat) and regaining representation.

Although Bündnis 90/Die Grünen polled less well in 1998 (6.7 percent) than it did in 1994 (7.3 percent), it had a major breakthrough when the Socialist Party invited it to form a Red-Green coalition. This was the first time that a green party was in a coalition government in a major economy anywhere in the world. Gerhard Schroeder of the Social Democratic Party became chancellor, and Joschka Fischer, a central figure in Bündnis 90/Die Grünen, became foreign minister. Two other ministerial posts went to Bündnis 90/Die Grünen: consumer protection, food, and agriculture (Renate Kunast) and environment (Jürgen Trittin). The greens used their position in the coalition to push through ecological tax reform (reducing the tax burden

on workers), while increasing taxes on energy (which was also intended to reduce energy consumption), a nuclear phase-out plan, and active promotion of renewable energies through special feed-in tariffs.

The Red-Green (Social Democratic Party–Bündnis 90/Die Grünen) coalition remained intact after the 2002 elections, when Bündnis 90/Die Grünen won 8.6 percent of the vote. The coalition dissolved after the 2005 election that brought in Angela Merkel as chancellor. This was due to the Socialist Party's poor showing rather than that of Bündnis 90/Die Grünen, which polled 8.19 percent of the vote and won 51 seats in Parliament.

A second major boost for the party came as a result of two major interconnected developments. First in 2010, the coalition government of Christian Democrats and the Free Democratic Party announced a plan to extend the country's remaining nuclear power plants' operations by 8 to 14 years, depending on the age of the plant. This led to huge countrywide anti-nuclear demonstrations. Then in March 2011, the **Fukushima disaster** occurred in Japan. While the conservative government led by Angela Merkel reacted speedily to the changed circumstances (and organized a new plan to exit nuclear power even more quickly than the SPD-Bündnis 90/Die Grünen coalition had decided on in 2000/2001), considerable damage to the party's image had been done.

The Fukushima disaster influenced numerous state-level elections significantly. In the state election of Baden-Württemberg, which was held just two weeks after the disaster, the green party polled a record 24.2 percent. The Christian Democratic Union, which had a monopoly on power in the state until this time, was forced to give up its leadership position. Bündnis 90/Die Grünen thus became the dominant party, forming a coalition with the Social Democratic Party; for the first time, Germany had a green minister president (somewhat analogous to a governor). Bündnis 90/Die Grünen achieved representation in all state parliaments after the September 2011 election in Mecklenburg-Vorpommern was held.

At the state level, Bündnis 90/Die Grünen has attracted enough votes to secure continuous representation in most parliaments. Its share of the vote rose consistently in large states such as Baden-Württemberg, North Rhine Westphalia, and Rhineland-Palatinate, and in city-states such as Berlin and Bremen, throughout much of the 1990s. In 1996, the party held seats in all the state parliaments of western Germany and in Saxony-Anhalt in eastern Germany. Bündnis 90/Die Grünen entered coalition governments in Berlin from 1989 to 2001 (with the SPD), Bremen from 1991 to 1995 (with the SPD and FDP), Brandenburg from 1990 to 1993 (with the SPD and FDP), Niedersachsen from 1990 to 1994 (with the SPD), and Sachsen Anhalt from 1990 to 1994 (with the SPD).

In the 2000s, Bündnis 90/Die Grünen began to take more seriously the possibility of forming coalitions with parties other than the Social Democrats. It took a step in this direction in 2006 when Bündnis 90/Die Grünen accepted to join the Christian Democrats in a coalition in Frankfurt. This was not the first time Bündnis 90/Die Grünen and the Christian Democrats toyed with closer cooperation. Support from the Christian Democrats resulted, for instance, in the November 1994 election of Antje Vollmer, a leading figure in Bündnis 90/Die Grünen, to the position of deputy parliamentary speaker. The Christian Democrats also became eager to involve members of Die Grünen in parliamentary committees. Black-Green (CDU–Bündnis 90/Die Grünen) coalitions formed in several urban areas, including Mulheim/Ruhr, Saarbrücken, and Köln (Cologne). These changes flowed from the increasingly precarious position of the Free Democrats, who had served as coalition partners for over a decade, and the growing influence of the “realists” or “Realos” with their more practical and compromising orientation, rather than the “fundamentalists” or “Fundis” within the party.

The Christian Democrats had also become more serious about environmental issues. After Die Grünen entered the Bundestag in 1983, the CDU responded with a series of new air-pollution-control laws. Following the Chernobyl nuclear accident, the government created a Ministry for Environment, and Nature Conservation Nuclear Safety in 1986. Following reunification, the federal government led by the Christian Democrats had to deal with new severe environmental challenges arising from reunification. Although the Constitution of the (former) German Democratic Republic included a clause on the protection of nature and plans for preventing pollution, pollution problems were dramatic. The most acute were land and water contamination caused by chemical plants, coal mining, and uranium mining over several decades; the decline in air quality largely due to the use of brown coal in power plants; and the safety of nuclear reactors. The federal government first introduced its own structures and laws for environmental protection and safety standards in the East. While this was critical from an environmental perspective, it contributed to a huge loss in employment in the East. Apart from subsidies based on higher taxes on citizens in the West, which were then pumped into the “new” states of East Germany as well as support from European Union reconstruction funds, the federal government funded numerous projects (and thereby created new jobs) to solve environmental problems. In addition, there were rapid moves to close down nuclear power plants in the East. New jobs were created as a result of decommissioning.

In 1994 the Constitution of the Federal Republic was amended to include a specific commitment to protect “the natural foundations of life for future generations.” The conservative government also played a leading role at the 1992 **United Nations Conference on Environment and Development (UNCED)** in applying pressure on other countries to follow its lead in requir-



ing a total ban of **chlorofluorocarbons (CFCs)**, pushing other members of the EU to implement commonly agreed-upon directives on environmental policy, and supporting the 1997 **Kyoto Protocol**. German chancellor Angela Merkel was environment minister under Helmut Kohl. She played a significant role in the G8 summit in 2007 in which **Canada, France, Germany, Italy, Japan, Russia, the United States, and the United Kingdom** participated and persuaded them to agree to aim to at least halve global CO<sub>2</sub> emissions by 2050.

As a result of changes in both Bündnis 90/Die Grünen and the CDU, there have been numerous coalitions formed between them: Hessen (2014–2018; 2018– ), Baden-Württemberg (2011–2016; 2016– ), Sachsen Anhalt (CDU, SDP, Bündnis 90/Die Grünen 2016– ), and the Saarland (CDU, FDP/DPS, Bündnis 90/Die Grünen 2009–2012). There are now only four states where greens have not been in a coalition cabinet: Bayern, Mecklenburg-Vorpommern, Rheinland Pfalz, and Sachsen. Even here, however, Bündnis 90/Die Grünen has a presence. In the 2018 state (Land) election, Bündnis 90/Die Grünen became the second largest party, after the Christian Social Union, and polled as the strongest party in the city of Munich.

Bündnis 90/Die Grünen's attraction has been tied in part to its progressively broadened focus that includes a wide range of economic and social issues. It is certainly not a "one-issue" party; the party has numerous issues that have served to differentiate it from other parties and mobilize electoral support. Apart from environmental issues, which have to some degree been adopted by the other parties, Bündnis 90/Die Grünen took the lead in opposing nuclear energy, supporting renewable energy and the Energiewende toward a low-carbon economy, promoting local and organic foods and consumer protection, criticizing patronage and corruption in politics, advancing women's rights, and advocating migrants' protection.

Many voters have appreciated the party's efforts to uncover shortcomings in the political system, to practice grassroots and **direct democracy**, to mandate a balanced representation of men and women in party positions, and to reduce the privileges enjoyed by parliamentarians.

The party has also learned with time and responded to changing political winds. There have been various important shifts in its positions with time. The party's decision to support German involvement in NATO operations in Bosnia and later in Afghanistan proved a major break with its past position of opposing foreign military intervention and NATO involvement, and angered many of the Fundis in the party. The party shifted to accepting of the use of military force against terrorism and genocide. It has, however, continued to largely oppose exporting military weapons. The Realos have become dominant, and the Fundis have had to take a backseat. Some party rules have been loosened, such as the rotation principle. The party is no longer viewed as a party of young "hippies" but rather of serious and experienced politicians.

They have held not only positions in state and federal cabinets as environment ministers, but also as ministers of health, economy, foreign affairs, and justice, among other ministries.

In the coming years, the party will be focused on how to capitalize on its recent successes, expand its presence in the East, and address issues such as transportation infrastructure, migrant issues, and women's ascendance into more leadership positions. In 2017 federal election, Bündnis 90/Die Grünen earned 8.9 percent and won 67 seats in the Parliament, which was 4 seats more than it received in 2013.

Apart from the importance of the federal structure, environmental policy making in the Federal Republic of Germany has been shaped by a tradition of formal cooperation between government and influential interest groups, notably industrial organizations. There is also an enduring and successful practice of informal cooperation among the government, opposition, and bureaucracy. In the 1970s and early 1980s, both the informal approach to cooperation and the formal corporatist system appeared to be working against the inclusion of new political movements. In response to pressure by the green movement and widespread skepticism about the appropriateness of the prevailing approaches to environmental questions, the traditionally largest parties (both the CDU and the SPD) began to play a more active role in environmental protection and considering the possibility of including Die Grünen in the informal processes of deliberation over policy and promoting environmental protection at regional, national, and international levels.

Due to its strength, Die Grünen is able to send the largest number of delegates to the European Parliament of any country. After the 2004 European Parliament election, the greens won the right to send 13 delegates to Strasbourg. Bündnis 90/Die Grünen took 10.7 percent of the vote in the 2014 elections, winning 11 seats. The next largest number of green MPs came from France, which had 6 seats. In the 2019 European Parliament elections, the German Greens surged, winning 21 seats. *See also* ENERGIEWENDE (ENERGY TRANSITION); NUCLEAR ENERGY.

***THE GLOBAL 2000 REPORT.*** *The Global 2000 Report* summarizes the findings of an investigation by the U.S. Council on Environmental Quality. The report was commissioned by the government and first published in 1980. It contains a critique of previous accounts of the current and future condition of the environment and its own analysis of trends. Like many of the critiques of *The Limits to Growth* thesis, the study questioned prevailing presuppositions about political and social values as well as the availability of mineral reserves and fossil fuels. *The Global 2000 Report* pointed out that *The Limits to Growth* failed to produce accurate analyses of problems in particular regions and did not recognize that the type of economic growth that occurs can hugely influence the rate of depletion of natural resources.

*The Global 2000 Report* drew attention to the many possibilities for disaster if prevailing trends are not addressed through cooperation between nation-states. In particular, the report pointed to the links between **population growth**, the state of the environment, and the depletion of natural resources. The report also gave a number of specific predictions for the year 2000: namely, an increase in the frequency of natural disasters caused by human interventions; the destruction of tropical rainforests, which would lead to the extinction of hundreds of thousands of plant and animal species; a 50 percent increase in the population of the world, with most of the growth taking place in poorer countries; an increase in the gap between rich and poor; and the diminution of resources such as land, water, and oil.

The Council on Environmental Quality published a further report, *Global Future: Time to Act*. This report outlined measures such as investment in renewable sources of energy and sustainable land use. There was also an emphasis on improved coordination between government agencies as well as the establishment of new structures.

#### **GLOBAL COVENANT OF MAYORS FOR CLIMATE & ENERGY.**

This international alliance of cities and local governments aims to promote low-emission and resilient societies and to cooperate in initiatives to combat climate change through sharing information and, at times, joint actions. UN Secretary-General Ban Ki-moon launched the Global Covenant of Mayors for Climate & Energy in 2014. It brings together the EU Covenant of Mayors and the Compact of Mayors.

**GLOBAL ENVIRONMENT FACILITY (GEF).** The GEF was set up in 1991 to help developing countries fund projects and programs that protect the global environment. The United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), and the World Bank initially managed GEF projects. As of 2016, the GEF has 18 implementing partners including development banks, international environmental NGOs, and the UN agencies. GEF grants support for projects related to **biodiversity**, **climate change**, chemicals and waste, international waters, land degradation, and sustainable management of forests. *See also* GREEN CLIMATE FUND (GCF).

**GLOBAL FOOTPRINT NETWORK.** Global Footprint Network aims to advance the science of sustainability through development and using the concept of the ecological footprint. Based on the ideas of William Rees and Mathew Wackernagel, the group was founded in 2003 and issues the annual National Footprint Account, calculating the ecological footprint and biocapacity of over 200 countries.

**GLOBAL GREENS.** Founded in 2001 in Canberra, **Australia**, Global Greens is an international network of green parties and movements. It has its roots in the First Planetary Meeting of Greens held at the **United Nations Conference on Environment and Development (UNCED)** and hosted by the Brazilian Green Party (Partido Verde). At the UNCED, a Global Green steering committee was formed; its first meeting was in January 1993 in Mexico City where members formed the Global Green Network. In the following years, there were sporadic efforts to turn this network into more than a name, through the publication of the Global Green Calendar, Global Green Bulletin, and Global Green Directory. In 1999, there was a renewed push for global green networking that led to the Oaxaca Declaration, which called for the formation of a global green network of green parties to take “coordinated action on matters of common global concern.” The Global Greens hold a congress every five to seven years. The fourth congress was held in Liverpool, UK, in 2017. It was held jointly with the European Green Party, the Green Party of England and Wales and the Global Greens. The congress ended with the declaration “Greens: A Global Movement, a United Vision,” which highlighted several points: keep global warming to no more than 1.5 degrees above preindustrial levels; provide clean electricity for all; keep fossil fuels in the ground; protect forests; compensate for loss and damage; protect and restore nature, promote an ecological economy and new governance arrangements that support sustainable food, water, and urban systems; promote participatory democracy and women’s empowerment; defend media freedom; and promote social justice.

**GLOBAL WARMING.** *See* CLIMATE CHANGE; GREENHOUSE EFFECT.

**GLOBAL YOUNG GREENS.** Established in 2007 by young people from around the world while participating in the World Social Forum in Nairobi, Kenya, Global Young Greens (GYG) is an emerging youth-led organization and a worldwide nonprofit network of young green activists and organizations. It addresses ecological sustainability, social justice, peace, and grassroots democracy while pursuing the goals of empowering young people in participatory democracy, addressing inequalities between organizations and individuals, and furthering green principles. Global Young Greens involves 70 youth organizations and hundreds of individuals from around the world.

**GLOBE INTERNATIONAL, GLOBAL LEGISLATORS’ ORGANISATION FOR A BALANCED ENVIRONMENT.** GLOBE International was formed in 1989 as an interparliamentary consulting group with the U.S. Congress, the **European Parliament**, the Japanese Diet, and the Russian

Duma to exchange information and coordinate policy action on pressing environmental matters. Since then, it has expanded to include legislators from over 80 countries committed to pursuing and overseeing the implementation of laws for **sustainable development**. GLOBE was the only non-governmental body to take part in the G20 Ministerial Gleneagles Dialogue in 2005. GLOBE legislature forums were started to bring together groups of 100 bipartisan legislators twice a year from the G8+5 group of countries. This culminated in the G8+5 dialogue on climate change in 2008 in Tokyo. The GLOBE International board meeting was held in Berlin in 2012. The GLOBE Climate Legislation Initiative was launched in 2013 to advance national legislation related to **climate change**. The secretariat is located in Brussels, **Belgium**. The office of GLOBE Europe is in Brussels, and the GLOBE **Japan** secretariat is located in Tokyo. The secretariat is tasked with producing annual legislation studies, most notably, the GLOBAL Climate Legislation Study. To further the implementation of the Biodiversity Convention, GLOBE International launched the project “Integrated Multi-purpose Forest Governance for the National Delivery of Sustainable Development, Biodiversity Objectives.” GLOBE International launched the first World Summit of Legislators in 2012. The second World Summit of Legislators took place in Mexico City in June 2014.

**GOLDMAN ENVIRONMENTAL PRIZE.** Established in 1990 by Richard and Rhoda Goldman, the Goldman Prize is the largest prize awarded to grassroots environmental activists. There are typically between six and eight awardees per year from around the world. One of the six recipients in 2006 was Yu Xiaogang. Yu was recognized for his successful efforts to promote watershed management along Lashi Lake, which involved not only local authorities but also nongovernmental organizations (NGOs) and residents in the **People’s Republic of China** for the first time. He was also recognized for his work educating local residents and government officials on the potentially harmful environmental and socioeconomic implications of a series of 13 dams that were planned to be built along the Three Parallel Rivers—the Nu, the Jinsha (Yangtze), and the Lancang (Mekong). As a result of his efforts, Premier Wen Jiao Bao put a temporary halt on the construction of the dams, which would have forever altered a United Nations World Heritage Site. The 2018 winners were: Makoma Lekalakala and Liz McDaid, who worked to stop the South African government’s secret nuclear deal with Russia; Mracia Márquez, who organized the women of La Toma to stop illegal gold mining in their ancestral land; Khanh Nguy Thi, who used science to advocate for sustainable, long-term energy production in **Vietnam**; Manny Calonzo, who persuaded the Philippines government to ban the production, use, and sale of lead paint; LeeAnne Walters, who led the citizens’

movement that exposed the Flint, Michigan, polluted tap water crisis; and Claire Nouvian, who led a data-driven campaign against destructive deep-sea-bottom trawling.

**GOLDSMITH, EDWARD.** *See* “A BLUEPRINT FOR SURVIVAL”; DEINDUSTRIALIZATION.

**GORZ, ANDRÉ (1923–2007).** Gorz was a social philosopher who helped found the field of political ecology. He was born in Vienna with the name Gerhard Hirsch and went to France in 1939 after the Nazis annexed Austria. Although he studied chemical engineering, he wrote articles in a number of political journals and became close with Jean-Paul Sartre, who influenced his sociopolitical views then. After moving to Paris, he worked as a journalist at *Paris-Presse* as well as *L'Express*. He began to use his pseudonym, André Gorz, for his theoretical works about social systems and socialism.

He influenced the New Left movement with his support of the pursuit of individual autonomy. However, his stance on politics and philosophy as well as his opposition to nuclear power led to conflicts with his colleagues at the journals *Les Temps Modernes* and *Le Nouvel Observateur*.

Gorz argued that the financial, labor, and ecological crises couldn't be regarded separately as they are the result of the same capitalistic economic system. He argued that the current economic system cannot continue as is and that radical alternatives must be considered. He advocated a **basic income** and reduced working hours as a scheme for liberating people from paid labor. His books include *Ecology As Politics* (1975), *Farewell to the Working Class* (1982), *Paths to Paradise* (1985), *Critique of Economic Reason* (1988), *Reclaiming Work* (2000), and *Ecologica* (2010). He committed suicide together with his ailing wife at the age of 84.

**GRASSROOTS DEMOCRACY.** *See* DIRECT DEMOCRACY.

**GREAT BRITAIN.** *See* UNITED KINGDOM.

**GREECE.** Though far less developed than northern European countries, Greece experienced very high rates of economic growth in the 1960s and 1970s. The focus on economic development has left many pressing environmental problems unaddressed in both political debate and policy implementation. Until 1989, the established parties felt no pressure from environmentalist political organizations, and the poor performance by the latter since then has allowed the major parties to retain their focus on economic rather than environmental issues.

In policy, there is a conspicuous difference between legislation, or intent, and implementation, or practice. To a degree, Greece's 1981 membership in the European Communities placed some pressure on the government to enact new legislation. The obstacles to its implementation were, however, substantial. The Greek Constitution, framed in 1975 after the resignation of the military junta in 1974, provided for "the protection of the natural and cultural environment" by the state (article 24). There were also pledges to protect forests. In addition, the government established the National Council for Physical Planning and Protection of the Environment in 1976. In the 1980s, various governments formed ministries that combined the administration of environmental issues with other areas of responsibility. The net outcome of these initiatives, including the attempts to implement directives issued by the European Union (EU), was mixed.

There were at least two major obstacles: first, the focus on economic development and the pressure to maintain the pace of industrialization, and second, the divisions in the structure of public administration and lack of coordination among government agencies. Many different ministries had responsibilities pertaining to environmental protection. Often, protection of the environment was regarded as of secondary importance if there was a potential for dispute with industrial or economic interests. Still, some government agencies, particularly at the local level, began exploring possibilities for **sustainable development**, particularly in the area of tourism and the need to prevent pollution in order to maintain this sector. Among the most pressing problems affecting Greece are air pollution (particularly the smog over Athens), deforestation, drought and associated fires, soil erosion, waste, and noise pollution.

A difficulty in dealing with these issues was the lack of public awareness about their urgency although this may now be changing. The growth of environmental groups may alert more people to these problems and is certainly a novelty in the political life of the country. However, their access to policy making is limited. Government agencies, through membership in the EU and international meetings, have nonetheless become more aware of measures that can be adopted to influence both business and industrial organizations, as well as individual citizens, to give greater consideration to the environment.

Thus far, environmental issues have not formed a significant part of Greek political life though, as in most European countries, attempts have been made to create new political organizations to address these questions. In 1986, environmental groups participated in local elections without much success. In 1988, some groups tried, without any lasting effect, to form a citizens' union. In 1989, some of these groups managed to form the Ecologists-Alternatives Party and competed in the June elections to the **European Parliament**. They polled only 1.1 percent of the vote and failed to secure any seats.

In October 1989, a large number of environmental groups formed the Federation of Ecological Organizations, with a view to competing in a national election the following month. They retained the name Ecologists-Alternatives, and although they polled only 0.6 percent, they secured one seat in Parliament. In the national elections held in April 1990, their share of the vote rose to only 0.8 percent, and they retained one seat. In local elections in 1990, the environmentalists managed to gain seats on some municipal councils.

The Federation of Ecological Organizations' loose structure failed to unify its highly diverse member groups. Apart from arguments about organizational structures (centralized versus decentralized), there were disputes over fundamental principles (shallow versus **deep ecology**). These quarrels delayed the founding congress of the party until February 1992 and then came to dominate it. To confound matters, the sole parliamentary representative of the party detached herself from the organization and sat as an independent delegate. For a time, it looked as if it were the death knell of efforts to form a green party in Greece.

A decade later, however, Oikologoi Prasinoi (Ecologist Greens) was formed. The members of Prasini Politiki (Green Politics), which had represented Greek environmental interests in the European Federation of Green Parties prior to this, joined Oikologoi Prasinoi. The founding declaration of the party defines it as internationalist and pacifist, community oriented, movement oriented, feminist, anti-consumerist, antiauthoritarian, and alternative. Oikologoi Prasinoi ran in the 2006 local elections for the first time and won 2 seats in the Prefecture Council of Thessaloniki. In the 2009 European Elections, they succeeded in returning Michalis Tremopoulos to the European Parliament.

The debt crisis, which started in late 2009, put Greek society into turmoil. Tough austerity measures were implemented as part of conditions required by the EU and the International Monetary Fund. As a consequence, public spending was cut, and citizens focused on protesting these policies. The number of homeless people increased, and the unemployment rate soared to 28 percent in 2014. The economic crisis resulted in a change in political leadership. Syriza, an anti-austerity, radical-left party took power. Before the 2015 national elections, Oikologoi Prasinoi agreed to collaborate with Syriza. Because Syriza won the elections, Yorgos Dimaras was elected as the first Green MP in Greece. Also, Yannis Tsironis from the Oikologoi was appointed alternate minister of environment and energy. In September 2015, after the resignation of the prime minister, Syriza won the election again. Yorgos Dimaras was also reelected, as was Yannis Tsironis, who was reappointed as the minister of environment and energy.



**GREEN-ALTERNATIVE EUROPEAN LINK.** *See* EUROPEAN PARLIAMENT.

**GREEN BELT MOVEMENT.** The driving force behind this movement was **Wangari Maathai**, who grew up in **Kenya** and studied in the **United States**. On her return to Kenya, Maathai became interested in altering the trend toward desertification of the land. An active member of the Kenyan National Council for Women, Maathai also had connections with prominent individuals in the **United Nations Environment Programme (UNEP)**. The first step toward the Green Belt movement was taken on 5 June 1977, World Environment Day. Seven trees were planted in Nairobi. Apart from securing corporate sponsorship for tree planting—for instance, from Mobil Oil—Maathai ensured that her initiative was backed by organizations such as UNEP and by local political elites.

Organizations such as the Danish Voluntary Fund for Developing Countries, the Norwegian Forestry Society, and the Spirit of Stockholm Foundation also provided valuable financial support. Hundreds of tree nurseries were established, employing thousands of people, mainly women, and involving participation by hundreds of thousands of schoolchildren. Apart from the success in reversing, through planting millions of trees, some of the damage inflicted on the land, the movement has raised awareness about the connection between development and environmental protection. It has also promoted a number of other goals, including the creation of employment opportunities in agriculture, improving the status of women, and undertaking research in collaboration with universities.

**GREEN CLIMATE FUND (GCF).** A global financial mechanism established at the 16th Conference of the Parties to the **UNFCCC (UN Framework Convention on Climate Change)** in 2010 for investment in climate resilience and low-emissions projects. The main goal of the mechanism is to assist developing countries' climate change adaptation and mitigation activities. The fund is expected to become the major platform of climate change aid, as the parties to the UNFCCC agreed that US\$100 billion per year needed to be raised by 2020. As of the end of 2018, US\$4.6 billion had been pledged, and US\$1.62 billion had been collected. At COP 24 (United Nations Conference of the Parties to the UNFCCC), Germany doubled its pledge to the fund to €1.5 billion, following Norway's decision to double its pledge. *See also* CLIMATE CHANGE; GLOBAL ENVIRONMENT FACILITY (GEF).

**GREEN CONSUMERISM.** *Green consumerism* is the idea that individuals can support environmental protection through their consuming choices. Joh Elkington and Julia Hailes's 1989 bestseller *The Green Consumer Guide* did much to popularize the concept. Green consumerism focuses on products that do not: pose a danger to health; have a critical impact on the environment as a result of their manufacture, use, or disposal; require large amounts of energy to manufacture, use, or dispose of; make use of materials from species or environments that are at risk; or cause cruelty to animals. Many green-consumer supporters also support socially conscious consumerism.

Some of the critics of green consumerism, such as Sandy Irvine in her book *Beyond Green Consumerism*, have recognized that the approach advocated by Elkington and Hailes can enable the green movement to exert immense pressure on business and industrial groups to change dramatically the entire process of production or risk losing their customers. However, along with many other proponents of *The Limits to Growth* thesis, Irvine is skeptical about the possibilities for overcoming some of the fundamental problems of our economic and social system. Critics of placing too much emphasis on green consumerism argue that it is impossible, even for highly educated green consumers, to be fully cognizant of the involvement by a particular manufacturer or corporation in a wide range of activities, some of which may have an adverse impact on the environment. More significantly, they argue that in order to address environmental questions, we will need to do much more than substitute goods produced, used, and disposed of in ways that damage the environment with those that have a less deleterious impact; we will need to consume less. This means that we will not only need to enhance the resource efficiency of our economies but also to engage in societal value changes and modify our consumption behaviors to protect the Earth's carrying capacity (also called *sufficiency*).

Green consumerism, they maintain, perpetuates the illusion that we can maintain affluent lifestyles without harming the environment. In addition, the critics suggest that only fairly affluent people can afford the selectivity and lifestyle implied by the proponents of green consumerism. *See also* CIRCULAR ECONOMY; GREEN ECONOMY; STEADY-STATE ECONOMY.

**GREEN ECONOMY.** The concept of the green economy was first created in an advisory report for the British government, "Blueprint for a Green Economy," by a group of British economists in 1989. Although *green economy* was in the title, the report focused on the interpretation of sustainable development and its implication for economic growth.

There is no internationally agreed-upon definition of *green economy*. UNEP has defined it as "one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive." The

Green Economy Coalition has offered a simpler definition: “a resilient economy that provides a better quality of life for all within the ecological limits of the planet.” These interpretations share a concern for our environment and integrate this concern with economic progress.

The green economy concept was revived after the 2008 financial crisis. It was conceived as a recovery stimulus for multiple crises the world faced. In 2008, UNEP launched its Green Economy Initiative. UNEP green economy reports have played an important role in extending the interpretation of green economy and attracting political and public attention. The green economy was a central idea espoused at the Rio+20 conference in June 2012. *See also* SUSTAINABLE DEVELOPMENT.

**GREEN EUROPEAN FOUNDATION.** The Green European Foundation is a European-level political foundation with support from the European Parliament. Its mission is to contribute to the development of a European public sphere and to foster more involvement by citizens in European politics so as to develop more participatory democracy. Focus areas include climate and energy, refugees and migration, the **green economy**, commons, and work and solidarity, among other areas.

**GREENHOUSE EFFECT.** Concern about global warming as a result of industrial development has become widespread since the 1980s. The term *greenhouse effect* has been used to characterize the warming of the atmosphere as a result of water vapor and gas emissions (carbon dioxide, methane, nitrous oxides, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) that prevent heat from escaping Earth’s surface. Carbon dioxide is currently the largest contributor to the greenhouse effect. In the Earth’s atmosphere, carbon dioxide and certain other gases function like a greenhouse. They provide a passage for light waves from the sun but restrict the escape of thermal radiation from Earth back into the atmosphere. The main sources of carbon dioxide emissions come from burning fossil fuels such as oil and coal, though other processes such as burning wood, agricultural activities, and deforestation also contribute to the problem. Over the past century, there has been a steep increase in the rate of carbon dioxide emissions and other greenhouse gases. The **Intergovernmental Panel on Climate Change** has warned that anthropogenic (caused by humans) contributions to the greenhouse effect could lead to a warming of the planet, and that this in turn could lead to catastrophic climate change if dramatic efforts to control emissions are not taken in the coming years.

**GREEN LEFT.** *See* ECOSOCIALISM.

**GREEN MOVEMENT OF SRI LANKA.** This is a consortium of 153 nongovernmental organizations (NGOs) in Sri Lanka that are concerned with environmental conservation and awareness and empowerment of the poorest segments of society. The consortium is a member of the Asia Pacific Greens Network.

**GREEN NEW DEAL.** Barack Obama spoke of a green new deal during his 2008 U.S. presidential election campaign, framing this as a means of putting people back to work through infrastructure development, **renewable energy** use, and the development of fuel-efficient cars and alternative energy technologies. In 2018, newly elected to the U.S. House of Representatives, Alexandria Ocasio-Cortez proposed a stimulus program aiming to address **climate change** and economic inequality. The concept draws on Franklin D. Roosevelt's New Deal program to stimulate jobs in the face of the Great Depression. The Green New Deal resolution has won many sponsors, primarily from the Democratic Party, but also many critics, primarily from the Republican Party and including President Donald Trump.

**GREENPEACE.** Greenpeace once described itself as “an independent, campaigning organization, which uses **nonviolent**, creative confrontation to expose global environmental problems, and to force the solutions which are essential to a green and peaceful future.” On the whole, Greenpeace has focused on direct protest actions. It has been more successful with its campaigns, both legal and illegal, than any other organization in attracting the implicit support of the media and explicit approval of millions of people.

The origins of this environmental protest organization can be traced to the 1969 formation of the Don't Make a Wave Committee in Vancouver, **Canada**. This group, which included people who had protested the Vietnam War, launched a campaign against the testing of nuclear weapons over the atmosphere in the Aleutian Islands. The Greenpeace Foundation was created in 1971, the year in which protesters sailed an old fishing boat to the vicinity of Amchitka Island off the coast of Alaska, an area being used by the U.S. government to test nuclear devices. Apart from effecting a postponement and ultimately the abandonment of these tests, the protestors attracted media attention and a considerable amount of popular support. These events set the pattern for future successful action by Greenpeace. The organization would focus on a particular issue with a view to receiving maximum attention from the media. It would then conduct its protest in a highly organized and professional manner.

In 1971, a crew of 11 men set out in a hired fishing boat to Amchitka in the Aleutian Islands to protest U.S. nuclear weapons testing there, and later the French atmospheric testing at Mururoa in French Polynesia. They used the

slogan “green peace” to represent their environmental concerns, and their hopes for a world free of the threat of nuclear war. In 1973, the Greenpeace Foundation was created in Vancouver.

The Greenpeace Foundation was involved in the famous 1975 at-sea protest of whaling and the 1976 campaign against the clubbing of seals in Newfoundland. The Greenpeace message became popular, and Greenpeace organizations began to form in countries around the world. The Sea Shepherd Conservation Society, founded in 1977, also has its roots in British Columbia. It is an activist group with early links to Greenpeace, and its mission is the enforcement of international laws governing the world’s oceans, especially where no enforcement exists. In 1979, the *Sea Shepherd* rammed a whaling ship, the *Sierra*, effectively disabling the ship. While originally allied in their efforts to oppose illegal whaling, poaching, and shark finning, considerable tensions emerged between the Sea Shepherd Conservation Society and Greenpeace in the mid-2000s as the two groups grew apart in their strategies.

In 1972, Greenpeace carried out one of its most memorable protests when, backed by major volunteer associations such as the **Sierra Club**, **Friends of the Earth**, and the World Council of Churches and by the Canadian government, it launched a campaign against nuclear weapon testing by the French government in the Mururoa Atoll in the Pacific. Led by David McTaggart, a Canadian who later became director of Greenpeace International, a group of activists embarked on a voyage, sailing right into the nuclear test zone.

The risks undertaken by McTaggart and his crew, who sailed to within 50 miles of the site where a bomb was detonated, drew an enormous amount of attention to their cause. This was followed, in August 1973, by another attempt to enter a zone for testing nuclear weapons. On this occasion, French troops set upon the crew with force. Photographs of the beatings brought further adverse publicity for the French government, which, in November 1973, declared a pause in the tests. Greenpeace gained attention and an increase in donations as a result of the media attention surrounding these events.

The determination of the French to continue with the tests provided an ideal focal point for Greenpeace’s professional campaigns over the next 20 years. The turning point in this battle was the death of a Greenpeace member in 1985, when the French intelligence service bombed the Greenpeace ship *Rainbow Warrior* while it was moored at Auckland harbor in New Zealand. The incident led to the resignation of Charles Hernu, the French minister of defense. It also increased the popularity of Greenpeace, which by now had conducted international campaigns on issues such as the protection of seals and whales as well as the transportation and disposal of nuclear waste. At the national level, Greenpeace carried out highly visible campaigns against pollution, for example, against the contamination of rivers by chemical compa-

nies. Following its inquiries into the Ciba-Geigy factory in New Jersey in the **United States**, the company had to face numerous criminal charges and pay fines of more than US\$4 million.

Support for Greenpeace grew at a rapid rate, especially in the late 1980s. Between 1981 and 1989, Greenpeace increased its worldwide revenue, raised largely from private donations, from US\$1.2 million to US\$100 million. In the early 1990s, it had around 40 branches in 30 countries and claimed around five million supporters in 158 countries. Approximately half of its supporters lived in the United States. In Europe, the two largest concentrations of supporters were in the **Netherlands** and **Germany**. In 1990, there were about 750,000 supporters in Germany alone.

The 1990s, however, proved a difficult time for the organization. It had become too large and bureaucratic for many of its supporters. Its flamboyant tactics had lost their novelty and appeal for others. The Bill Clinton/Al Gore administration was viewed as relatively supportive of environmental causes. Membership in Greenpeace USA dropped. In the late 1980s, Greenpeace USA had 22 regional offices and a membership of around one million. With dropping membership and financial support, in 1997 the organization was forced to lay off three-quarters of its staff. In 2006, it had but two regional offices. Membership was down to around a quarter of a million, the same level as at the end of the 2010s. Membership in European branches dropped as well although not as dramatically as in the United States. International membership figures stood at roughly 3 million, so it is still one of the largest environmental groups in the world.

Greenpeace campaigns are now focused on addressing **climate change**, protecting forests and oceans, opposing genetic engineering, eliminating toxic chemicals, demanding peace and disarmament, and preventing the expansion of nuclear energy. One of its climate change campaigns, “Save the Arctic” affected Shell’s decision to abandon plans for Arctic oil drilling in 2015.

**THE GREENS–EUROPEAN FREE ALLIANCE.** In 1984, the Green parties of **Belgium, France, Germany, Luxembourg, the Netherlands, Sweden, Switzerland,** and the **United Kingdom** formed the European Coordination of Green Parties. It was established to lend coherence to the efforts of green parties to influence the direction of European politics.

With the European continent undergoing sweeping political changes as a result of the collapse of the communist Eastern bloc, the European Coordination of Green Parties felt it was necessary to speak in a single voice. This led to the formation of the European Federation of Green Parties in June 1993 at a conference held in Masala, **Finland**. The new federation agreed on a set of guiding principles. These focused on the economy (patterns of consumption and production), citizenship (including a focus on equal rights for all individ-

uals regardless of gender, age, race, religion, ethnic or national origin, sexual orientation, wealth, and health), democratization, and security. Some of these themes were articulated in the section “The New Citizenship,” which called for expanding civil rights, democratic participation, human rights (“without discrimination on the basis of race, disability, gender, sexual orientation, religion, age or national or ethnic origin”), and protection for the rights of minorities. The federation opposed the strong reactions against newcomers to Western Europe and called for a “humane immigration policy.” It also supported proportional electoral systems.

The federation’s principles included a pan-European strategy of ecological and social reform. Economic development was to focus on “cooperation not competition.” Both free-market and state-controlled economies were rejected as they assumed no limits to economic growth. The European Greens emphasize “ecological sustainability, equity and social justice” and argue for “the protection of the diversity of ecological resources and the global commons.” They also focus on the burden of debt affecting poor countries and the question of **population growth** and how it should be slowed. Europe, they argue, should foster more “self-reliant” national, regional, and local economies within a “Europe of Regions.” Any attempt to measure the performance of the economy should include all social and environmental costs, for instance, by imposing “ecological taxes” on resources such as nonrenewable energy and activities that threaten the environment. Recycling and repairing things are similarly emphasized.

The federation also calls for a conversion of the economy, for example, from the production of military equipment and chemicals to new sectors that focus on recycling, public transport, agriculture, forestry, nature protection, environmentally sound technology, and reducing energy consumption.

Other themes include a ban on the construction of nuclear power plants, phasing out existing facilities, and the end to the EURATOM (European Atomic Energy Community) treaty. According to the organization, forestry and agricultural practices should also be changed to prevent overproduction by the European Union (EU) and pollution and to protect endangered species and expand forest area.

The federation urges a more equitable distribution of wealth and resources between western, eastern, and central Europe and the introduction of environmental safeguards across the continent. The federation also envisions a new European security system that is not dominated by Western organizations such as the North Atlantic Treaty Organization (NATO). Rather, the peace-oriented Common Foreign Security Policy should be pursued, and a European civil peace corps created. The federation rejects nuclear weapons and calls for a comprehensive test ban treaty.

In 1999, a new grouping emerged when the European Free Alliance joined the Greens to form the Greens/European Free Alliance. The European Free Alliance is a group of political parties that espouse democracy and independence or self-government (e.g., Plaid Cymru in Wales, the Scottish National Party, the Republican Left of Catalonia, and For Human Rights in **Latvia**). The group aims to promote fundamental human rights and environmental justice, deepen democracy through decentralization and enhancing people's participation in decision making, enhance the openness of government, and reorient Europe toward social, cultural, and ecological values. The group has copresidents to ensure gender balance. The European Greens-European Free Alliance maintained the fourth largest bloc in the European Parliament until 2014. In the 2014 European Parliament elections, the Greens-European Free Alliance won 50 seats but fell to sixth largest bloc. In the 2019 European parliamentary elections, riding a wave of concern about the rise of the far right, many voters gave their support to the bloc, making it the fourth largest political group with 74 seats. *See also* CARBON PRICING; EUROPEAN GREEN PARTY; EUROPEAN PARLIAMENT; POLLUTER PAYS PRINCIPLE.

**GREENWASHING.** The act of misleading audiences about environmental performance or environmental benefits of products or services is known as *greenwashing*. It can entail the use of certain images, phrases, and rhetorical instruments that create a facade of caring about the environment while not actually doing so, usually in the private sector. Lack of clear definitions and criteria, as well as insufficient regulation, are among the major reasons companies are able to greenwash their actions. The term was coined around 1990 in the United States.

Environmental movements in industrial countries succeeded in putting ecological issues at the center of public concerns during the 1970s, raising consumers' environmental awareness. The corporate world has tried to react to this trend. While some corporations took steps to reduce their negative environmental impacts, many others used minor or misleading actions in order to present the image of change and in this way attract potential customers and build a positive public image. Examples of greenwashing abound. Greenwashing can involve changing a name, logo, or slogan. It may involve rebranding or distracting consumers from the bigger picture, using technical terms that sound ecofriendly, making environmental claims that can't be proven, or investing in green projects while having a core business in brown activities.



**GROSS NATIONAL PRODUCT (GNP).** Concern about *The Limits to Growth* and damage inflicted on the environment by industrial society has given rise to a variety of suggestions for reconceptualizing economic performance. Green economists have called into question the conventional measures of performance, notably the use of GNP. The principal limitation of the exclusive focus on GNP is the failure to consider factors such as health, social, and some **quality-of-life** indicators; the neglect of the informal economy, which varies immensely in size in different countries; and, above all, the disregard for the environmental costs of economic development.

Instead of GNP, the traditional measure of wealth, green economists have argued for the inclusion of the above indicators and a more differentiated approach to promoting economic growth. In some sectors of the economy, economic growth may be highly advantageous, and in others it may be undesirable, especially because of damage to the environment. The green movement has begun to influence some governments and international agencies to the extent that greater effort has been applied both to measuring and publicizing performance along the lines suggested by green economists. Furthermore, techniques such as carbon taxes and **pollution charges** have been proposed for placing a value on the impact of various processes on the environment. *See also* STEADY-STATE ECONOMY; VALUING THE ENVIRONMENT.

**GUARANTEED MINIMUM INCOME.** A guaranteed minimum income is central to the platform and policies of many green political organizations. The guiding principles of the **European Federation of Green Parties** (as resolved on 20 June 1993 at the conference at Masala, Finland) stated, "Every person has the right to free education, social protection, and a guaranteed social minimum income."

The connection was then made between the maintenance of a comprehensive social security system (which covered "the basic needs of all people" and did not rest on the notion of paid work) and the notion of sustainability: "Sustainability will not be possible as long as poverty persists, or people live in material insecurity. We will ensure a guaranteed minimum income for every citizen through either a social assistance scheme or minimum wage legislation, or improved welfare benefits or the introduction of the basic income, or a combination of the above mentioned." Die Grünen in **Germany** has long argued for a guaranteed minimum income that excludes any attempt to measure the financial assets of individuals or their employment record.

A comprehensive defense of such schemes has been elaborated by Paul Ekins in *The Living Economy*. Ekins states that a "basic income scheme" would have the following aims: to prevent rather than just relieve poverty, replace the prevailing system of social security and tax relief, and abolish some of the traps that arise from the current operation of the welfare state.

These include, according to Ekins, the poverty trap (an increase in pay can lead to the withdrawal of crucial social security benefits), unemployment trap (if you do not work for low wages you lose all entitlements), idleness trap (which has apparently prevented people from undertaking voluntary work because they would otherwise be seen as technically not seeking formal employment, and thereby lose entitlements), and spendthrift trap (if you save above a certain amount of money you lose entitlements to social security benefits).

There are two fundamental criticisms of this universal scheme that aims to provide benefits at a higher level than the existing system. The first is that it would be very costly and thereby lead to higher taxes for everyone. The second is that for many people at the lower end of the socioeconomic ladder, it may provide a disincentive to seeking employment. At any rate, these ideas about a guaranteed minimum income reflect the strong emphasis in green political organizations on social justice and egalitarianism. The hope cherished by many green political activists is the guaranteed minimum income scheme, with its strong emphasis on universal rather than individually means-tested forms of social benefits, will engender a spirit of cooperation and serve as a defense against the forces of competition, which are often regarded as responsible for the destruction of the environment. *See also* BASIC INCOME.

# H

**HARDIN, GARRETT.** *See* TRAGEDY OF THE COMMONS.

**HUNGARY.** In order to join the European Union, Hungary had to adopt all environmental laws established by the European Union. There has been substantial improvement in environmental conditions in Hungary, and protection of the environment has been incorporated into its constitution. Still, many challenges remain, especially in the adequate implementation of environmental laws. Hungary continues to pursue nuclear energy to the dismay of neighboring nuclear-free Austria. As a result, the country has also done less with renewable energy than others. The environment has not been a high priority of the right-leaning Viktor Orbán government, which has failed to see the need for a separate Ministry of the Environment and Water, which it shut down in 2010. Instead, environmental matters are addressed by the Ministry of Agriculture. There is a small green party known as Lehet Más a Politika, which translates literally to Politics Can Be Different. It was formed in 2009 and is affiliated with the European Green Party. After the 2018 Parliament election in Hungary, the party claimed 8 seats in parliament. It failed, however, to win any seats in the European Parliament elections in 2019, even though it had had one seat in the European Parliament after the 2014 elections.





**ICLEI-LOCAL GOVERNMENTS FOR SUSTAINABILITY.** Founded in 1990, this is a coalition of city, town, and local governments that have made a commitment to **sustainable development**. It originally stood for the “International Council for Local Environmental Initiatives,” which formed in 2003. The organization changed its name to reflect its broader focus on sustainability. Today it is a global network dedicated to assisting its more than 1,000 members in making cities sustainable, low carbon, resilient, and resource efficient. The international association also shares information on sustainable development initiatives, provides training courses, and works to build local capacity to deal with global environmental problems.

**INDIA.** The 1900s were a time of revolution for underrepresented groups in India, and it was at this time that environmental movements began. Modernization and industrialization caused increased deforestation and abuse of natural resources; as these initially affected the rural population most immediately, it was they who first created ecological movements.

In 1972, Jharkhand Mukti Morcha, or Jharkhand (or *forest area*) Liberation Front, emerged. Jharkhand desired to protect the rural community from natural resource and human-labor capital exploitation. However, the movement diminished after being placated by Indira Gandhi’s government’s development programs.

One of India’s most significant social movements was the **Chipko** (embrace) **Andolan** Movement, which emerged in 1973. Unique because its major constituency was women, including the well-known ecofeminist **Vandana Shiva**, the Chipko Andolan Movement’s members opposed commercial deforestation and would hug the trees so that contractors could not remove them. In Uttar Pradesh, the Chipko Andolan Movement had a major victory in 1980 when Prime Minister Indira Gandhi passed a 15-year ban on green felling. These protests and subsequent victories spread to other regions in India, including Karnataka, Rajasthan, and Bihar.



**Promoting solar energy at the Indian Institute for Technology Bombay. Courtesy of Miranda Schreurs.**

The struggle by fishermen in the southern state of Kerala in the 1980s symbolized an even more active form of protest against an increasingly industrialized and ecologically destructive state. The main reason for the fight was the use of mechanized trawlers that caused increased destruction to marine ecosystems and the overfishing of young fish. Composed of clergy, nuns, and fishermen, the protests spread from Kerala up to the coastal city of Goa and down to the south to Tamilnadu, where violent clashes took place.

Saving Yamuna—the river that Delhi depends on for more than 60 percent of its water-related needs but is highly polluted—is a more recent green movement in India. In 2010, thousands of people from Delhi gathered to support the Meri Dilli Meri Yamuna (My Delhi My Yamuna) project. It was launched by Sri Sri Ravi Shankar, the founder of the Art of Living, in mobilizing the citizens of Delhi to clean up the river. In 2015, the movement gathered around 80,000 people walking to Delhi to ask officials to clean up the Yamuna River. Later that year, the Delhi government planned to bring out new legislation to eliminate further pollution to the river by bringing the Tamuna River under the Environmental Protection Act, and by constructing a parallel canal so that no pollution is dumped in the river.

The Indian National Green Party, initially led by Dr. Priya Ranjan Trivedi, who is also the convener of the World Federation of Green Parties, was officially registered with the Election Commission of India on 7 January 1999. As a relatively young party, it is small, but due to the range of opinions that the Indian National Green Party holds, from land reform to health care to environmental sustainability, it has been able to pull in a range of voters. At the start of 2019, the party is still led by Dr. Trivedi. It has a long list of issue priorities including the young; older people; women; traditional political issues like health, education, housing, and transport; various environmental issues; governmental reform; peace and security; and debt reform, among other issues.

The party promotes itself to young people, with catchphrases such as, “Catch them young” and “Each one teach one.” Members believe that the youth can change the world if they learn to be both ecologically respectful and socially aware. The official charter of the Indian National Green Party has a list of beliefs and goals including **ecology**, democracy, social justice, peace, **sustainable development**, meaningful work, culture, information, global responsibility, and a long-range future focus.

The party emphasizes the need to reduce carbon dioxide and other **greenhouse** gas emissions, limit the amount of various types of waste produced and expelled into the environment, and protect biological diversity (**biodiversity**). It is greatly concerned with the depletion of natural resources, due specifically to mining and the overuse of land in agriculture. The party also emphasizes education and states that it is important that there be a national educational system whose focus is on teaching the importance of global interdependence. The party is also aiming for nationalized health care and preventing the spread of disease in the population. It faces many challenges such as limited awareness and understanding of green politics among Indians, and lack of funding and candidates to run in elections. There have been no noticeable electoral successes so far.

Despite its name, the Indian National Green Party is not recognized as such by all. In 2012, India Greens—The Green Party of India was formed in New Delhi with the mission of building a national green party in India. The party calls for participatory democracy, social justice, respect for diversity, nonviolence, sustainability, and ecological wisdom. It held its first national convention and first general assembly on 17–18 November 2018 to adopt its preamble, constitution, core principles, policies, and ideologies based on the Global Greens Charter and green philosophy. Its president is Suresh Nautiyal. *See also* NARMADA DAM; SHIVA, VANDANA (1952–).

**INDIAN OCEAN TSUNAMI.** On 26 December 2004, an earthquake off the coast of Indonesia triggered the world’s most devastating tsunami, which led to the death of nearly a quarter of a million people. Deaths were most numer-

ous in Aceh, Indonesia, but the devastating force of the tsunami waves left a path of death and destruction across much of South and Southeast Asia. Environmentalists argue that the destruction of mangroves and other forests on coasts throughout the region contributed to the scale of destruction. The tsunami triggered efforts to improve early warning systems and disaster response globally.

**INDONESIA.** After Indonesia's independence from the Netherlands, President Soekarno and President Suharto ruled the country as authoritarian rulers. The first free and fair election was held in 1999 after the 1988 Indonesian Revolution and was accompanied by Suharto's resignation. Corruption and political patronage remain problems for the country's democracy.

Indonesia is one of the most biodiverse countries in the world. However, rapid economic development and a rapidly growing population have led to the deterioration of the environment. Some of the main environmental problems are deforestation, water pollution, air pollution, and smoke and haze from forest fires. In particular, deforestation due to illegal logging, forest fires, and the expansion of oil palm plantations are serious environmental problems. The forest fires often burn for several months, and acrid haze from



**Environmental activists from the Prakarsa NGO in Indonesia discussing renewable energy. Courtesy of Miranda Schreurs.**





**Bicycle rentals in Jakarta, Indonesia. Courtesy of Miranda Schreurs.**

the fires affects not only Indonesia but also neighboring countries such as Singapore and Malaysia. Deforestation and forest degradation account for the majority of Indonesia's greenhouse gas emissions and are the main reason that Indonesia was ranked the 13th largest greenhouse gas emitter in 2015.

Because of its rich biodiversity and the threats facing its environment, Indonesia has attracted attention from environmental groups around the world. The number of local NGOs has been increasing since the 1988 Indonesian Revolution. Their activities are mainly focused on counteracting forest fires, illegal logging, and the loss of tropical forests to plantations. There is also growing interest in **renewable energy**.

Friends of the Earth Indonesia (WALHI) started a discussion on forming a party to advocate green issues in 2005. In 2007, the Declaration of Sarekat Hijau Indonesia (Indonesian Green Union) was adopted in the Congress of the Indonesian People (Kongres Rakyat Indonesia). Sarekat Hijau Indonesia has not participated in elections.

**INDUSTRIAL SOCIETY.** The term *industrial society* has been used by leading figures in the green movement to criticize a wide range of established political regimes, including Communist, capitalist, or liberal democratic. All

of these political regimes have committed to economic growth tied to industrialization, technology, and the expansion of the means of production, hence the term *industrial society*. Prominent personalities such as Jonathon Porritt and **Rudolf Bahro** have criticized industrial societies. *See also* GROSS NATIONAL PRODUCT (GNP); *THE LIMITS TO GROWTH*.

**INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC).** The **United Nations Environmental Programme (UNEP)** and the World Meteorological Organization (WMO) established the IPCC in 1988 to provide clear scientific information on the current state of knowledge on climate change, its potential environmental and socioeconomic impacts, and options for adaptation and mitigation. The IPCC does not conduct its own original research but bases its assessments on the published research of thousands of scientists and experts. IPCC contributors are selected for their expertise by their governments and work on a voluntary basis. There are three IPCC working groups: Working Group I—the physical science basis; Working Group II—Impacts, Adaptation, and Vulnerability; and Working Group III—Mitigation of Climate Change. The IPCC has published five comprehensive assessment reports. The first synthesis report (1990) underlined the importance of climate change as a challenge requiring international cooperation. This played a decisive role in the creation of the **United Nations Framework Convention on Climate Change (UNFCCC)**. The second synthesis (1995) fed into the **Kyoto Protocol** (1997). The fourth synthesis paid greater attention to the integration of climate change with sustainable development policies and relationships between mitigation and adaptation. The fifth synthesis report clearly points to human influences as a primary cause of the global warming since the mid-20th century. The atmospheric concentrations of carbon dioxide, methane, and nitrous oxide are unprecedented in the last 800,000 years. The oceans have absorbed most of the heat, and there are measureable increases in average land and ocean temperatures. The consequences include more extreme weather events, the melting of Arctic and glacial ice, shortages of fresh water, desertification, increased poverty in some world regions, and increased displacement of people. The IPCC was awarded the Nobel Peace Prize in 2007 (shared with Al Gore).

**INTERGOVERNMENTAL SCIENCE-POLICY PLATFORM ON BIODIVERSITY AND ECOSYSTEM SERVICES (IPBES).** Set up in 2012, this independent, intergovernmental body of scientists from around the world assesses the state of **biodiversity** and the **ecosystem services** it provides to the world. It was modeled on the **Intergovernmental Panel on**

**Climate Change.** The IPBES issues monitoring and assessment reports and proposes strategic actions to be taken for biodiversity protection and sustainable use.

**INTERNATIONAL CAMPAIGN TO ABOLISH NUCLEAR WEAPONS (ICAN).** A coalition of 468 nongovernmental organizations in 101 countries was launched in Vienna, Austria, in 2007. It works for the abolition of nuclear weapons. In July 2017, the United Nations adopted the Treaty on the Prohibition of Nuclear Weapons. The treaty prohibits nations from developing, testing, producing, manufacturing, possessing, stockpiling, transferring, using, or threatening to use nuclear weapons. ICAN won the Nobel Peace Prize in 2017 for its efforts to achieve the nuclear weapon ban treaty. As of August 2019, 25 countries, primarily in Africa, South America, and Southeast Asia, had ratified the agreement.

**INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVELOPMENT (IIED).** Formed in 1971 by economist Barbara Ward, IIED is an international-development and environmental-policy research organization based in London. The organization mainly focuses on **climate change**, human settlements, natural resources, and sustainable markets. It aims to strengthen marginalized people’s voices in decision making and to ensure that policy better reflects the agendas of vulnerable communities. The organization partners with local organizations, indigenous groups, and multilateral agencies to conduct research and promote sustainable and equitable global development.

**INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT (IISD).** Based in Canada and opened in 1990, IISD has 150 people working in more than 70 countries and affiliates with more than 200 organizations worldwide. As a policy-research think tank, IISD reports on international negotiations and provides policy recommendations toward the challenge of integrating environmental and social priorities with economic development. On the shared goal of developing sustainably, the organization aims to report on international negotiations—the Earth Negotiation Bulletin (ENB)—conduct research, and engage citizens, business leaders, and policy makers.

**INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE (IUCN).** Founded in 1948 and known until 1956 as the “International Union for the Protection of Nature” and until 1990 as the “International Union for the Conservation of Nature and Natural Resources,” the IUCN is one of the most influential associations in promoting dialogue between na-

tional governments and nongovernmental organizations (NGOs). Its primary objective is to promote education and research with a view to protecting the environment and raising awareness of how much we rely on nature. It has three key priorities areas of work including valuing and conserving nature, fair and effective governance of nature's use, and nature-based solutions to global challenges. Max Nicholson and Julian Huxley were among the leading players in the founding of the organization.

The focus on conservation, and hence the change in name, came in 1956. The IUCN began to concentrate on conserving wetlands and the creation of **national parks**. Lacking funds for these initiatives, Huxley and Nicholson, among others, established an international fundraising organization for nature conservation, the **World Wildlife Fund (WWF)**. Early work by the IUCN targeted conservation in Africa. The **African Special Project**, initiated by the IUCN, had two important results. It rendered effective assistance to African governments concerned about the preservation of wildlife and development of land, and it established the credibility of the IUCN as an agency capable of providing guidance and expertise to less developed nations in their efforts to conserve and protect the environment. The IUCN was also instrumental in framing the **African Convention on the Conservation of Nature and Natural Resources**, signed by 33 African states in 1968.

The IUCN demonstrated a capacity to adapt to changing perceptions of how to protect the environment. Apart from special projects, it developed a vision of the interdependence of development and the environment. One of the most important initiatives by the IUCN in the 1970s was the formulation of the **World Conservation Strategy**. Another was its pivotal role in helping to convene the **United Nations Conference on the Human Environment (UNCHE)** in 1972.

*Caring for the Earth* (published with the **United Nations Environment Programme [UNEP]** and the **World Wildlife Fund [WWF]** in 1992) and *Global Diversity Strategy* (published in 1992 with UNEP, and the **World Resources Institute [WRI]**) were hugely influential in shaping the global environmental agenda.

The IUCN has played a crucial role in maintaining and articulating green issues. Though not formally a part of the United Nations, it has influenced the UN's environmental policies. The IUCN Red List of Threatened Species provides information about the conservation status and extinction risks of plants, fungi, and animals on a global scale. The IUCN has launched several programs to promote business engagement in **biodiversity** conservation. See also SUSTAINABLE DEVELOPMENT.

**IRELAND.** A Dublin schoolteacher, Christopher Fettes, formed the Ecology Party of Ireland in 1981. The party received only 0.2 percent of the vote in national elections held in November 1982. In 1983 it was renamed "Com-

haontas Glas” (Green Alliance), but still had little impact in electoral terms. Christopher Fettes secured 1.9 percent of the vote in the 1984 elections to the **European Parliament**. In the 1985 local elections, the Green Alliance only gained 0.6 percent of the vote. In 1987, the party changed its name to “Green Party/Comhaontas Glas” to clarify its image as a political party. The party’s fortunes improved somewhat after this time. Roger Garland was elected from South Dublin as the Green’s first delegate to the lower chamber of the Irish parliament, the Dáil. Trevor Sargent was elected in 1992 to the Dáil from Dublin North, although he lost his seat in a subsequent election. In the 1994 European Parliament elections, the Greens secured 2 of the 15 available seats (Patricia McKenna and Nuala Ahern). John Gormley was also elected in 1995 as the first Green Lord Mayor of Dublin. He subsequently became a delegate to the Dáil. Still, in the 1991 and 1999 local elections, the party was only receiving 2.4 percent of the national vote.

As has been the case with many other green parties, the Green Party’s poor electoral performance led to the decision to restructure and select a leader, deputy leader, and chairman. The strategy worked, and in the 2002 general election, the party won six seats in the Dáil. It kept six seats in the following election in 2006 and served in a coalition government from 2007 to 2011. During that time, the party held two cabinet positions: minister for the environment and minister for energy and communications. Although the party lost all of its seats in the Dáil in the 2011 election, it regained two seats in the 2016 election. Also, a former Greenpeace activist, Grace O’Sullivan was elected to the Irish Senate (Seanad) in 2016. The party won 12 of the 949 seats at the local level.

The Green Party of Northern Ireland decided to become a regional grouping within the Green Party/Comhaontas at its party conference in 2005. Steven Agnew, the leader of the Green Party of Northern Ireland, was elected a member of the legislative assembly (MLAs) for the North Down constituency in 2011.

At its founding, the Green Party/Comhaontas adopted seven principles, which were revised in 1997 and 2005. The party’s basic philosophy is that society’s impact on the environment should not be ecologically disruptive, resources should be conserved, and we should pass the Earth on to the next generation in a fit and healthy state. Their socioeconomic principles are: unrestricted economic growth must be replaced by an ecologically and socially regulated economy, the poverty of two-thirds of the world’s family demands a fair redistribution of the world’s resources, and both women and men must be enabled to take an equal and full share in all the responsibilities of life. Their political principles are that all political, social, and economic decisions should be taken at the lowest effective level; decisions should as far as possible be on the basis of consensus and respect for the rights of minorities; society should be guided by self-reliance and cooperation at all

levels; the need for world peace and justice overrides national and commercial interests; and there is no place for violence or threat of violence in the democratic political process.

**ISRAEL.** The Israeli environmental movement is rooted in the Zionist movement that was formed in Europe in the late 19th century and had exhorted a strong emotional and mystical connection to the historic homeland. Early Zionists had a romantic view of nature that fit well with the idea of returning to the historic homeland, and which ideally saw agriculture and connecting with nature as a fulfilling of Zionist ideology. Since the 1930s, the romantic view has given way to a more rationalist view of nature.

Prior to the establishment of the state of Israel in 1948, the founding fathers of the Israeli environmental movement were a group of life-science scholars, teachers, and nature lovers who were part of the social elite. They formed networks of knowledge sharing and promoted educational activities to pass on their views to youth groups and larger circles, while contributing scientific methods to the Zionist romantic view of the environment.



**Water heaters, air-conditioners, and drying clothes on Tel Aviv rooftops. Courtesy of Miranda Schreurs.**





**A statue made of electronic waste on the Tel Aviv University campus in Israel.**  
*Courtesy of Miranda Schreurs.*

After the establishment of the state of Israel, the new Israeli environmental movement was marked by the founding of the Society for the Protection of Nature in Israel (SPNI) in 1953, the most influential Israeli environmental nonprofit organization. Based on the core group of environmentalists prior to 1948, its values fit well with the young Zionist approach in the newly founded state: protecting nature as a mean to express emotional connection to the land. The SPNI was formed as a response to the (then) most extravagant developmental project to transform the “Hula” wetland into workable land. The campaign helped form and unite SPNI members and volunteers nationwide even though they failed to stop the development.

Although similar to European and American environmental movements in its romantic views of nature, the SPNI was not a countermovement, and its members suffered from an inherent contradiction: the founders and the leaders during its first decades were among the Israeli (Jewish) elite, the same elite that preferred development over any other consideration. This made it hard to resist developmental projects in some cases. At the same time, however, the SPNI used its close ties to the elite to promote nature preservation and protection.

In its first phase (1960s–1970s), the SPNI led several influential campaigns for nature preservation, but over time it developed vast educational and tourism infrastructures, it kept public interests in governmental forums, and it got involved in “new” environmental issues such as pollution and public health.

The dominance of the SPNI weakened in the 1990s as new nationwide NPOs (nonprofit organizations) and grassroots organizations emerged. Among the new NPOs, Adam Teva V’Din, a legal-focused NPO that led many successful environmental campaigns such as the changing of the cross-Israel highway plans, stands out. The northern grassroots organization the Coalition for Public Health made progress in fighting air pollution, while Green Course formed environmental cells on universities campuses. New initiatives can be found among the Israeli-Arab minority as well as Jewish-Arab collaborations in environmental campaigns. To date, the umbrella organization Life and Environment claims to unite over 100 member organizations.

These organizations are occupied with acute environmental issues such as public health, air and water pollution, land-use planning, recycling, and environmental justice. In contrast, other topics such as river pollution, use of pesticides, and GMOs are usually not popular among these new initiatives. Furthermore, **deep ecology** philosophy and other alternative views over the environment are not well accepted among the present environmental movement.

Although the Israeli environmental movement was involved in policy making and environmental politics for many years, it was not able to translate its power to meaningful, nationwide political power. In contrast, green parties can be found at the municipal level. In 2008, notable environmental academics and activists formed the Green Movements, and ran candidates for Parliament in the general elections. The movement failed, however, to receive enough votes or gain sufficient political weight to enter Parliament. To date, no green political power has emerged from the Israeli environmental movement.

**ITALY.** The Italian Greens are among those green parties that have joined left-of-center coalitions, which dominated Italian politics from 1996 to 2001 and, after 2006, were again in power. In 1996, the Greens joined Romano Prodi’s left-leaning Olive Coalition. When the coalition won the election, the Greens gained its first ministerial portfolio: Environment (Edo Ronchi). Ronchi was environment minister at the time of the 1997 Kyoto Conference, where the **Kyoto Protocol** was signed. He stayed in office until 2000. Another Green representative, Alfonso Pecoraro Scanio, was agriculture minister 2000–2001 and environmental minister 2006–2008. He has served as environment minister since 2006.



A pivotal issue in the emergence of the green movement in Italy was the plan to develop dozens of nuclear power plants announced by the government in 1975. This attracted strong opposition from both elite groups (scientists and intellectuals) and the public. Amici della Terra (**Friends of the Earth**) played an important role in organizing the campaign against nuclear power development. Prominent members of the Communist Party, which had become one of the dominant parties in Italy in the 1970s, joined in the campaign and even formed the Lega per l'Ambiente (Environmental League). Following the nuclear accident in 1986 at **Chernobyl**, the Lega per l'Ambiente organized a protest rally against the development of nuclear power, with up to 150,000 people attending. Founded in 1980, Lega per l'ambiente changed its name to "Legambiente" in 1992, to avoid confusion with other movements, especially with the Lega political party. In 1978, a group of environmentalists gave life to the magazine *Ecologia* (Ecology) (since 1980 *La Nuova Ecologia*), which became a reference magazine for Italian environmentalism.

In 1987, environmental groups initiated a national campaign for a referendum on nuclear power development, and the overwhelming majority of citizens voted against the national government's nuclear plans, voting instead for decisions to be made at the local level. A majority also opposed the development of the Super-Phoenix nuclear reactor project. Apart from the focus on environmental protection and opposition to the development of nuclear power, green groups have campaigned on social justice issues and improving participation through the extension of democracy and self-government.

The history of Italy's Green Party goes back to various green groups that began to run in municipal elections in 1980 in the towns of Este, Lugo di Romagna, Mantova, and Usmate. In 1983 they ran in elections in 16 locations. In the 1985 local elections, green groups put up 150 lists. They also competed in the regional elections, receiving 636,000 votes (2.1 percent). They gained 115 seats at the local level, 16 at the provincial level, and 10 at the regional level. In 1988, the Greens polled an average of 3.7 percent in local, regional, and provincial elections.

In November 1986, green groups in Italy formed the Federazione delle Liste Verdi (Federation of Green Lists), the forerunner of today's Italian green party, Federazione dei Verdi. This national federation came to be known as "the Greens." Other political organizations also campaigned successfully on a green platform; they include the Radical Party and Worker Democracy, which had been formed long before the Green Party. The Radical Party also collaborated with green groups in electoral campaigns.

The Italian electoral system has undergone various changes but has always included a degree of proportional representation; this has provided genuine opportunities for minority parties to gain seats. In the 1987 elections to the

national Parliament, green groups received around one million votes (2.5 percent) and gained 13 seats in the lower house and 2 in the Senate. In 1992, they procured a similar share (2.8 percent) and thereby won 16 seats in the lower house and 4 in the Senate. They attracted a similar share of the vote in elections to the Chamber of Deputies in 1994 (2.7 percent and 9 seats) and 1996 (2.5 percent and 14 seats in cooperation with parties such as the Democratic Left Party). Their share of seats in the Senate was 7 out of 325 in 1994 and 14 out of 325 in 1996.

Electoral results have influenced decisions regarding the Green Party structure and orientation. After the 1989 European elections, the Green Party received 3.8 percent of the vote, and a coalition of green associations, Verdi Arcobaleno (Rainbow Greens), gained a further 2.4 percent. The latter represented and reflected the connection between environmental issues and left-wing groups. After the election, in 1990 the Greens and the Verdi Arcobaleno joined forces and became the Federazione dei Verdi. Federazione dei Verdi remained a coalition of regional green groups until it officially became a party in 1996.

In the 2001 elections, when the right-of-center coalition led by Silvio Berlusconi was swept into power, the Greens, like all of the left, performed poorly. They had formed a short-lived common list with the Italian Democratic Socialists called *Il Girasole* (Sunflower) within the Olive Tree coalition. The combined list polled only 2.2 percent. Still, they were able to send eight delegates to the lower chamber and nine to the Senate.

In the 2006 legislative elections, with just 2.05 percent of the vote, the Federazione dei Verdi won 15 seats in the Chamber of Deputies as part of the Union Coalition. Another green list, *Ambienta Lista Ecologisti Democratici* (Environmental List Ecological Democrats) ran as part of the conservative *Casa delle Libertà* (House of Freedoms) coalition, but brought in only 17,574 votes (0.05 percent). In the Senate elections, the Greens joined forces with the Italian Communist Party and the United Consumers, forming a common list, *Together with the Union*. Combined, they won 11 seats (5 of which went to Green delegates). *Ambienta Lista Ecologisti Democratici* ran as part of the conservative coalition and received 11 percent of the vote, insufficient to obtain any seats.

Pecoraro Scanio became minister of the environment and Paolo Cento, national coordinator of the party, became under-secretary for economy and finance. In subsequent years, internal differences regarding the direction of the party led to a fractioning of the Greens.

After an unsuccessful election in October 2009, the party elected Angelo Bonelli, candidate of the liberal wing of the party, marking the end of the dominance of the left wing in the party. Bonelli announced that the party would pursue an independent course, taking inspiration from both the French Verts and the German Bündnis 90/Die Grünen, and being open to the contri-

bution of movements and associations. This effort was only partially successful as some former green leaders of the party chose instead to support Ecologists for Left Ecology Freedom (*Sinistra Ecologia e Libertà*, SEL).

In 2008, the rising price of natural gas and oil reopened the Italian debate on the possibility of reintroducing nuclear energy into the energy mix to solve the energy crisis of those years. Legambiente joined the coalition *Vote Yes to Stop Nuclear*, consisting of more than 60 associations, which provided the mobilization needed to get a referendum on the question. The referendum was held on 12 and 13 June 2011. As a result of both the Fukushima disaster (March 2011) and the global debate on the risks of nuclear facilities, the referendum confirmed that the majority of Italian citizens were against nuclear energy. In the 2013 general elections, the Greens supported Antonio Ingroia for prime minister and joined the *Civil Revolution (Rivoluzione Civile)* coalition, but they were unsuccessful in their bid. The party was similarly unsuccessful in the 2019 **European Parliament** elections.

The following year, the Greens participated in the 2014 European Election with Green Italy, a green party established in 2013, within the joint list Green Italy–European Greens. The electoral list received 0.91 percent of the vote and thus could not send any representatives to the European Parliament.

The ideological divides in the green movement have splintered green-leaning politicians. Thus, instead of being concentrated in a single party, they have run in different parties. This has arguably weakened the development of a specific “green” identity and the chances of the green movement.

The lack of an exclusive/specific representation of the Greens in Parliament increased the number of citizens’ committees and other environmental groups. In addition to *Italia Nostra*, *WWF-Italy*, *Federnatura*, *Amici della Natura*, *Legambiente* and *FAI (Fondo Ambiente Italiano, usually referred to in English as the “Italian National Trust”)*, a new environmental organization named *A Sud (South)*, which operates in the field of environmental justice, was founded in 2003. In 2007, *A Sud* founded the *Documentation Centre on Environmental Conflicts in Italy (CDCA)*. The center aims to research and provide information about both the causes of the environmental conflicts produced by the exploitation of natural resources, and their consequences. *CDCA* created the “*Italian Atlas of Environmental Conflicts*,” the first Italian open geo-referenced web platform built by an interdisciplinary team composed of researchers, journalists, activists, and territorial committees.



# J

**JAPAN.** In the Meiji era (1868–1912), there were numerous protest movements in Japan against pollution caused by mining activities, the most famous being the Ashio Copper Mine case. In the Taisho period (1912–1926), there were local protests against air pollution in cities and near industrial sites. Prewar militarism and a clampdown on leftist movements beginning in the mid-1920s largely silenced these protest activities. Japan's postwar development boom produced an economic miracle but a pollution nightmare. Four regions—Minamata, a small fishing village in Kumamoto Prefecture on the island of Kyushu; communities along the Agano River basin in Niigata Prefecture; rice farming villages along the Jinzu River in Toyama Prefecture; and the city of Yokkaichi—played a particularly large role in strengthening national awareness of the threats of industrial pollution to human health and in pressuring the government to take pollution more seriously. In all of these communities, the industrial dumping of toxic pollutants into water bodies or release of emissions into the air (in the case of Yokkaichi) over long periods of time resulted in severe and at times, life-threatening health problems. Victims complained to the industries, requested compensation, and demanded the end of polluting activities. While victims received small payments from the industries, nothing was done to stop the pollution. After years of frustration and with the aid of lawyers and journalists, these communities took their cases to court, an unusual step in a relatively nonlitigious society. The national attention that these cases received, along with hundreds of other environmental movements that formed, resulted in major grassroots pressures for political change and the eventual adoption of new pollution-control legislation.

The antipollution movements that emerged in the 1960s and 1970s were locally oriented. They forced local and national governments to address noise pollution, vibration, and pollution in urban canals; protect the right to sunshine for homes in cities that were rapidly being modernized; ensure food safety; and require the installation of pollution-control devices. The citizens' movements did not win all of their battles. Efforts to prevent the building, and later expansion of Narita airport, delayed construction plans by years, but

in the end, the airport was built and expanded, if less fully than was originally planned. Citizens' movements also failed to prevent the building of many dams, nuclear power plants, roads, apartment complexes, and the like. The most difficult cases for the movements were those that went against the plans of the powerful economic and construction ministries.

A few national environmental nongovernmental organizations (NGOs) formed relatively early in Japan, too. The largest and oldest NGO is the Wild Bird Society, established in 1934 with a membership somewhat over 50,000. Other groups that established themselves relatively early include the Nature Conservation Society of Japan (1951); **World Wide Fund for Nature (WWF)**, Japan (1971); and **Friends of the Earth**, Japan (1980). Compared to the situation in North America or Europe, however, Japan's environmental NGOs are small in size, both in terms of membership and budget.

Since the late 1980s, Japan's NGO community has been growing and becoming more concerned with global environmental issues. Friends of the Earth, Japan, started to take on the Japanese government regarding official development assistance (ODA) projects that were environmentally destructive. In 1989, they initiated a campaign against the planned construction of a huge dam in **Narmada, India**, that was to receive financing from Japanese aid. Japanese ODA programs also triggered the formation of the Japan Tropical Forest Action Network (JATAN). At the urging of international environmental groups that were working to stop logging in Sarawak, Malaysia, 12 Japanese grassroots groups and individuals formed a coalition in 1987 and established JATAN.

One of JATAN's first campaigns was an effort to stop the Japan International Cooperation Agency's funding of a subsidiary company of Itochu that was building a logging road in Sarawak that was threatening the survival of the Penan. In subsequent years, they launched campaigns against larger Japanese importers of tropical hardwoods.

The Citizens' Alliance for Saving the Atmosphere and the Earth formed in 1988; it became one of the leading NGOs in Japan working on campaigns to phase out ozone-depleting chemicals and reduce greenhouse gas emissions. **Greenpeace** established an office in Tokyo in 1989 in time to begin lobbying the Japanese government to introduce a greenhouse gas stabilization target prior to the **United Nations Conference on Environment and Development (UNCED)**.

There were still relatively few Japanese NGOs at the time of the UNCED. By the time of the December 1997 third conference of the parties to the **United Nations Framework Convention on Climate Change (UNFCCC)** held in Kyoto, Japan, where the **Kyoto Protocol** was drafted, there were 170 Japanese civil society organizations participating.

The Tokaimura nuclear accident in 1999 was the first severe nuclear accident in Japan. The incident followed several other nuclear mishaps, including a sodium leak and fire at the Monju prototype fast breeder reactor in Fukui Prefecture that was initially kept secret from the public. The ensuing public distrust and safety concerns led to the shutdown of the reactor in 1995 until a Supreme Court decision ruled in favor of the plant's reopening in December 2005. The Monju plant was last operated in 2010 and, due to multiple problems and huge costs, a decision to shut the plant down was reached in 2016. It is now scheduled for decommissioning.

The **Fukushima disaster** was caused by a massive tsunami after an earthquake occurred on 11 March 2011. Three reactors in the Fukushima Daiichi Nuclear Power Plants were severely damaged as a result of the flooding and loss of electricity, essential to the cooling systems of the reactors. Core meltdowns ensued, and nuclear substances were released to the air, soil, and water in the region, as well as into the Pacific Ocean. The Fukushima disaster is referred to as the second-worst nuclear accident in the world after Chernobyl.

After the Tokaimura accident, the Diet passed the Special Law of Emergency Preparedness for Nuclear Disasters. After the Fukushima disaster, Japan's nuclear power stations were taken off-line for safety checks and had to prove they could pass new stricter safety requirements. As a result, Japan has operated with 9 or fewer nuclear facilities since 2012 (as of August 2019), compared to 54 at the time of the Fukushima accident. While many environmental advocates and nuclear foes are pressing for a complete end to the country's dependence on nuclear energy, the Liberal Democratic Party–Kōmeitō Party coalition elected in 2012 changed course and aims to keep nuclear power as a main energy resource in the future. An independent Nuclear Regulatory Authority was established in 2012.

The passage of the Access to Freedom of Information Act and the Non-profit Organizational Law has been important to the empowerment of Japanese civil society. This legislation has made it easier for NGOs to organize, obtain legal status as nonprofits, and gather information for their campaigns. The government has also started to change its attitude toward NGOs. In the past, government officials tended to view NGO activists as left-wing radicals. Now the government is beginning to consult NGOs and to bring them into decision making related to environmental and ODA policies and programs.

The green power in parliamentary politics is growing in Japan, especially after the Fukushima disaster. The first green group was Rainbow and Greens Japan (Niji to Midori no 500 Nin Listo), a green politics network launched in 1998 by city councilors, prefectural members of parliament, and mayors. A remarkable 133 of the 226 candidates they supported won in the April 1999 local elections. They cooperated with another green group, Midori no Kaigi

(Environmental Green Political Assembly, formerly the Sakigake Party) in the 2004 election. Both groups dissolved in order to merge with the Japan Greens in 2007. They launched the political organization Green Future in 2008. After the Fukushima disaster, support for anti-nuclear and environmental movements grew, which spurred the formation of an official green party called Greens Japan in 2012. The party ran in the 2013 Upper House election with 10 candidates but did not win any seats. After a similar situation in 2015, the party decided to focus more heavily on local elections. The party has been successful in some local electoral races, winning places on 61 city councils in the 2015 nationwide local council elections. The biggest successes the party has had were the successful race for mayor of Amagasaki in Hyōgo Prefecture and a position on the Okayama Prefecture Council. The party has a 50 percent quota for female representation. Greens Japan is a member of **Global Greens**. In 2019 elections both at the local and national levels (House of Councilors), the Green Party struggled. The party has lost membership, and its members are aging.

**JOINT IMPLEMENTATION.** This flexibility mechanism of the Kyoto Protocol allowed Annex B countries—the 36 industrialized countries and economies in transition listed in Annex I of the United Nations Framework Convention on Climate Change (UNFCCC)—to obtain credits (emission reduction units [EURs]) toward their domestic emission reduction commitments by implementing projects to reduce emissions in other Annex B countries, which in practice means the economies are in transition. The principle behind this flexibility mechanism is to make emission-reduction actions more cost effective. Under article 6 of the Paris Agreement, new mechanisms, which go beyond Joint Implementation, the Clean Development Mechanism, and Japan’s Joint Crediting Mechanism, are being negotiated. *See also* CLEAN DEVELOPMENT MECHANISM (CDM); EMISSIONS TRADING.



# K

**KELLY, PETRA (1947–1992).** Born in West **Germany**, Petra Kelly grew up in the **United States** and participated in Vietnam War protests there. After returning to Germany, she took part in the Social Democratic Party before becoming a founding member of Die Grünen in 1980. From 1983 to 1990 she served as a parliamentary delegate for Die Grünen, though she always maintained that she was skeptical of confronting environmental problems through Parliament. In a 1982 *Der Spiegel* magazine interview, she explained that Parliament was not where decisions were made about the arms race, and it was important to continue to work at the grassroots level to develop alternative social and economic structures based on principles of self-help and environmental awareness. She felt that parliamentary democracy had to be broadened to include a party that was fundamentally opposed to war and committed to **nonviolence** and ecological principles. Later, in her book *Fighting for Hope*, she referred to Die Grünen as an “anti-party” party. The idea was for Die Grünen to use Parliament as a forum for publicizing issues and simultaneously maintain the strong connections between the party and grassroots social movements. By 1990, she and her partner, Gerd Bastian, a former army general who also served as a delegate for Die Grünen, had become detached from the party. They also withdrew from public life. In October 1992, both Kelly and Bastian were found dead in their home. Bastian had apparently shot Kelly in her sleep before taking his own life. See *also* **ECOLOGY**.

**KENYA.** Kenya has had some success at institutionalizing a green movement. In addition to the internationally renowned **Green Belt Movement**, **OSIENALA** (Friends of Lake Victoria) teaches local people how their day-to-day activities affect the lake habitat and encourages local research on the lake. Nature Kenya, previously known as the “East Africa Natural History Society,” created the first natural history museum in Kenya. Nature Kenya lobbies the national government and has been successful on issues such as the Environment Management and Coordination Act, the Forests Bill, and the National Environment Action Plan. Funding comes from international

groups in the **United Kingdom**. The group Wakuluzu specifically addresses **biodiversity**, especially primates. It educates the public about the things that endanger species, including habitat loss, poaching, and road kill.

While intense conflict existed between former Kenyan president Daniel arap Moi and environmental groups, the next president, Mwai Kibaki, came to power as part of the large National Rainbow Coalition, of which the renowned **Wangari Maathai** was a member. Kibaki appointed Maathai deputy minister of environment, natural resources, and wildlife. In 2003, she founded the Mazingira Green Party of Kenya. The party gained one seat in the 2007 general election but did not win any seats in the 2013 election, pulling in only about 1 percent of the votes. Kenya has instituted community-based natural resource management programs, which encourage local empowerment to protect the environment. Although this results in fewer baseline environmental standards, it also means wiser use of land based on local needs, and it makes rural people more inclined to support the environmental movement. Kenya also has thousands of self-help groups, such as the Harambee movement, that work to improve standards of living. The groups teach sustainable living and emphasize the relationship between environmental degradation and poverty.

**KLEIN, NAOMI (1970–)**. An award-winning journalist, syndicated columnist, and contributor to the *New York Times*, Klein is known for her political analyses and criticism of corporate capitalism. Besides the international best-sellers *No Logo* and *The Shock Doctrine*, in her 2014 book, *This Changes Everything: Capitalism vs. the Climate*, Klein points out that climate change is the alarm calling on society to fix a failing economic system. The neoliberal market has not and will not be a solution to climate challenges. Klein argues that we need to put an end to inequality, reimagine our broken democracies, rebuild our local economies, reduce greenhouse gas emissions on a large scale, and change human relationships with nature and one another. Although Klein identifies capitalism as the culprit of **climate change**, in the book she does not suggest an alternative economic system.

**KOREA, DEMOCRATIC PEOPLE'S REPUBLIC OF (DPRK)**. North Korea is a largely isolated socialist state. Its industrial structure encompasses iron and steel manufacturing and metallurgy, mining, processing, manufacturing, and chemical industries. Energy shortages continually plague the country, and this has led to wide-scale deforestation as citizens seek the means to cook and heat their homes.

According to government documents, environmental management is a primary concern of the state. The focus is on improving the efficiency of resource use while protecting biodiversity and preventing air, water, and soil

pollution. These efforts are codified under the Law on Environment Protection established in 1986. The DPRK has established institutions for environmental protection such as the Ministry of Land and Environment Protection. The Natural Conservation Union, founded in November 1959 at the Central Committee plenary meeting in 2000, discussed activities to protect the environment, such as planting and protecting trees, building embankments on rivers, and making green cities. The United Nations Environment Programme was allowed to conduct a state of the environment report there in 2003 together with the Ministry of Land and Environmental Protection.

During the “Arduous March” also known as “The March of Suffering” during the mid-1990s when the DPRK faced bad weather, severe energy shortages, food insecurity, and a loss of export income, famine consumed the country. While there are no good publicly available figures for just how many died, estimates are between hundreds of thousands and a few million. Subsequently, environmental improvement activities were implemented on a national scale. The DPRK has engaged in various international environmental agreements and, for a time in the 1990s and 2000s, permitted environmental and energy-efficiency projects sponsored by South Korea, such as manufacturing more efficient stoves for homes and building simple passive-housing structures and basic greenhouses. These could be viewed as forms of environmental peace building. There are dreams of turning the demilitarized zone that separates North and South Korea, which now harbors many endangered species, into an international peace park, should relations one day improve on the divided peninsula.

**KOREA, REPUBLIC OF.** The Republic of Korea (also known as South Korea) was an authoritarian state until the democratization movement led by students, labor union activists, and elements of the Korean Church succeeded in transforming the political system with the elections of 1987 and 1992. Grassroots demands for environmental protection began to grow in the 1980s as Korea’s rapid industrialization caused increasingly bad pollution problems. Protests erupted near major industrial complexes in Ulsan, Pusan, and Yecheon. The antipollution protesters saw their struggles against industrial pollution as an integral component of the struggle against military dictatorship.

A few environmental nongovernmental organizations (NGOs) and research institutes formed in the 1980s. The Korea Pollution Research Institute was founded as the first professional environmental NGO in the country. The Korea Antipollution Movement Council, which formed in 1984, and the Korea Antipollution Civilian Movement Council, which formed in 1986, merged the next year to create the Korea Antipollution Movement Association.

There has been a rapid growth in the environmental movement since the late 1980s. Antipollution groups protested the Doosan Electrical Company's phenol emissions that contaminated drinking water; plans for an industrial complex on the NakDong River; the designation of Gureop Island as a nuclear waste storage site; and the implementation of the Four Major Rivers Restoration Project.

Umbrella organizations began to form in the 1990s as well. In 1993 the Korea Federation for Environmental Movements formed and became the largest environmental group in the country. In 2001, it had 25 local branches and 25,000 members. In 2018, it had 45 local branches and over 85,000 members. It has been active in **anti-nuclear**, anti-golf course, nature conservation, and citizen education efforts, among many other campaigns. It has also supported green candidates for election. The League of Environmental Movements, Green Korea United, and the Korea Wetlands Association are other groups that formed at this time. Compared with many other countries that have experienced democratic transition in the post-Cold War period, South Korea's environmental community is quite robust.

In 2004, individuals, local council members, and civil-reform-movement activists' intent on greening and democratizing Korean politics formed the Korea Greens. As a nonparty political organization, the Korea Greens struggled to gain votes in the party nomination system, which was favorable to major parties. Only two candidates from the Korea Greens were elected in local elections in 2006, and the organization dissolved in 2008. Subsequently, Green Party Korea formed in 2012 as the first green party at the national level in the Republic of Korea. No candidates from the Green Party Korea were elected in the 2012 general election or the 2014 local elections. In the 2016 general election, the party nominated four candidates in Seoul, Gyeonggi, and Daegu, but none were elected.

Since 2008, there have been opposition movements against a major construction project called the "Four Major Rivers Restoration Project." It was part of the Green Growth Act, which was heavily criticized by environmental groups. The project, consisting of 16 dams and the dredging of four major rivers, was pushed through and completed within three years. Environmental groups and local residents near the rivers have continued to monitor the changes in the river ecosystems since the project's completion.

After the Fukushima disaster, public awareness of the danger of nuclear power increased considerably in South Korea. The anti-nuclear movement now extends from a few environmental NGOs to diverse citizen groups. After the Democratic Party won the 2017 presidential election, the Korean government declared its commitment to reducing dependency on nuclear energy and moving toward more renewable-energy resources.

**KYOTO PROTOCOL.** The Kyoto Protocol to the **United Nations Framework Convention on Climate Change (UNFCCC)** was formulated with the goal of reducing greenhouse gas emissions from industrialized states by 5 percent of 1990 levels by 2012. By ratifying this protocol, countries pledged to reduce carbon dioxide emissions as well as five other greenhouse gases. They could do this by making cuts to domestic emissions, by participating in emissions trading, or by two other flexible implementation mechanisms known as the **clean development mechanism** and **joint implementation**. These permit industrialized states to obtain credit for reducing greenhouse gas emissions in developing countries or transition economies.

The treaty was negotiated in Kyoto, **Japan**, in 1997. It was opened for signatures on 16 March 1998 and entered into force on 16 February 2005. The first commitment period ran from 2008 to 2012. The European Union (EU) and 191 states ratified it. Only Annex I countries—that is, the industrialized states and some transition economies—were required to make emissions cuts under the agreement. Developing countries, including some major greenhouse gas emitters such as **India** and the **People’s Republic of China**, were not required to make emissions cuts under the protocol.

The **United States** signed but did not ratify the agreement. The George W. Bush administration attracted global criticism for pulling the United States out of the Kyoto Protocol. The Bush administration argued that the treaty would place an unnecessary strain on the American economy. In addition, **Canada** withdrew from the protocol in 2012.

As the first phase of the Kyoto Protocol ended in 2012, it had to be extended at least until a global agreement could replace it. In the Conference of the Parties to the UNFCCC held in 2012 in Doha, Qatar, some Annex I parties made new commitments to reduce greenhouse gas emissions by at least 18 percent below 1990 levels from 2013 to 2020. As of 2017, over 75 countries had ratified the Doha Amendment, but missing from these were several key Annex I countries, including Canada, Japan, **Russia**, and the United States, greatly reducing the amended protocol’s reach. In 2015, a new, more comprehensive and inclusive agreement (the **Paris Agreement**) on reducing carbon emissions was realized. *See also* CLIMATE CHANGE.



# L

**LALONDE, BRICE.** *See* FRANCE.

**LAND GRABBING.** *Land grabbing* refers to local communities and individuals (e.g., small landholders) losing access to land that they had previously lived or worked on because an outside actor has claimed the land. Typically, this occurs with inadequate or no compensation. Often, land grabbing is linked to multinational or other large corporations that take over land for large-scale production of commodity crops, such as sugarcane, palm oil, and soy for biofuels. Such forms of intensive agriculture typically have increased water demand, thus many land grabs deprive communities not only of land but also often create various environmental problems. In vulnerable communities, a hike in food prices often accompanies landgrabs. Many NGOs have urged governments to provide secure access to land for smallholder farmers and especially vulnerable groups, and to support small-scale farming with sustainable techniques. Land grabbing has been a worldwide problem. Today it is particularly problematic in Central and South America, Africa, Asia, and **Russia**.

**LAO PEOPLE'S DEMOCRATIC REPUBLIC (LAOS).** The Communist Party has been in power in Laos since 1975. It is one of the least developed countries in the world but has experienced rapid economic growth in the past decade. Natural resources such as water, forests, and minerals are playing a crucial role in the Lao economy. Sustainable management of the country's natural resources is a key issue. Environmental degradation has been increasing along with economic growth. Civil-society movements have little voice in the system.

Deforestation is a major environmental problem in Laos, mainly due to legal and illegal logging to produce timber, fires, plantation expansion, mining, urban development, and shifting cultivation. The government set up a forestry strategy and has been participating in international REDD+ discussions to slow deforestation.

The Xayaburi Dam, which has been under construction since 2012, has been very controversial. The dam is on the Lower Mekong River and is expected to generate hydroelectric power for export. The Lao government has a plan to build nine dams on the river, and the Xayaburi Dam is the first project. It is likely that the dams will alter biodiversity along the Mekong River and affect communities dependent on the fishery industry. In 2015, the Lao government approved the construction of another dam, the Don Sahong Dam, despite the concerns of neighboring countries such as Thailand, Cambodia, and Vietnam.

**LATIN AMERICA AND THE CARIBBEAN REGION.** The Latin America and Caribbean (LAC) region, which includes the countries of Central and South America, as well as the island nations of the Caribbean, is rich in natural resources and home to some of the greatest ecological **biodiversity** in the world. Five of the 10 most biologically diverse nations in the world—**Brazil**, Colombia, Ecuador, **Mexico**, and Peru—and 40 percent of the Earth’s species are in Latin America.

In 1992, “Our Own Agenda,” an initiative promoted by the Inter-American Development Bank (IDB) and the United Nations Development Programme (UNDP), as a Development and Environmental Commission for Latin America and the Caribbean (CDMAALAC), identified nine key environmental concerns facing the region: land use, forest resources, ecosystems and biological patrimony, water resources, sea and shoreline resources, the environment in human settlements, energy, mineral resources, and industry.

The creation of state agencies responsible for the environment, such as the Ministry of Sustainable Development and Environment in Bolivia; the Secretariat of Environment, Natural Resources, and Fisheries in Mexico; the Natural Resources Conservation Department of Jamaica; and the national environmental commissions in Chile and Guatemala, have been an important step toward environmental conservation and protection in the region.

The Inter-American Development Bank (IDB) and the Economic Commission for Latin American and the Caribbean (ECLAC) are the two major organizations assisting member countries to address environmental issues by financing activities and capacity building to improve sustainable environmental management while fostering competitiveness and productivity for economic and social development.

Growing public participation has proved crucial in increasing environmental awareness and spurring environment policy initiatives. The role of non-governmental organizations (NGOs) in policy formation as well as the creation and direct oversight and management of protected areas has grown substantially. The involvement of NGOs has been especially critical to the creation of protected areas such as the Atlantic Forest Biosphere Reserve of Brazil and biosphere reserves in Mexico. Furthermore, the governments of



Guatemala, Honduras, and **Costa Rica**, as well as other countries, have begun to directly involve NGOs in the management of **national parks** and other protected areas. In an effort to ensure public participation, Mexico, Colombia, and Chile have passed legislation that requires the establishment of local environmental planning communities with broad social representation.

Green parties have emerged in a number of the countries of the region but on the whole have struggled to obtain a political foothold. They have done best in Brazil and Mexico.

**LATVIA.** The Latvian Green Party (Latvijas Zaļā Partijas) was formed in 1990, prior to Latvia's official independence. Latvia has the distinction of having the first Green prime minister in the world: Indulis Emsis. He became prime minister in February 2004 after the breakdown of the four-party government that was then in charge. His minority government, however, was forced to resign in the fall of the same year. The Latvian Green Party was a coalition partner of the national government from 1993 to 1998, during which Emsis was environment minister, and from 2002 to 2004, the party was put in charge of four ministries. In 2006, Emsis became speaker of Parliament. The party formed the Greens and Farmers Union (Zaļo un Zemnieku Savienība [ZZS]) with the Latvian Farmers' Union in 2002. In the 2014 parliamentary election, ZZS won 21 seats to become the third largest party in the country. The following year Raimonds Vejonis became the first Green Party member elected to serve as a president anywhere in the world. He was twice environment minister and then defense minister before being elected president. The Latvian Green Party, unusually for a green party, leans center-right.

**LEAGUE OF CONSERVATION VOTERS.** A bipartisan group that educates the public about important environmental legislation and the environmental performance of elected leaders. Each year, the league produces the National Environmental Scorecard and Presidential Report Card, to show the electorate how their representatives have voted on environmental and energy matters, global warming, public health, wildlife conservation, and spending for environmental programs. The league gave Donald Trump an *F* for his first year in office, the worst possible grade. The 2018 scorecard lamented the Trump administration's continued "assault" on air, land, water, and soil to benefit its corporate supporters. *See also* UNITED STATES OF AMERICA.

**LEOPOLD, ALDO (1886–1948).** Born in 1886 in Iowa, Aldo Leopold is celebrated for his 1949 work *A Sand County Almanac*, which has been highly influential in the development of the green movement and a source of inspiration for the perspective on the environment known as **deep ecology**. Leopold graduated from the Forestry School at Yale University and was then employed by the U.S. Forest Service in Arizona. His book *Game Management* (1933) focused on the effective management and conservation of forests and wildlife.

Leopold was recognized as a key figure in the development of an ethic for the relationship between human beings and their environment. He sought to develop a system of values that went beyond the predominant focus on economic relationships. The notion of a land ethic was meant to extend “the boundaries of community” to cover soil, water, plants, and animals. Leopold argued that the time was ripe for developing a land ethic and, like **Rachel Carson** in her 1962 best-seller *Silent Spring*, painted a bleak picture of the damage being inflicted on the environment. Leopold pointed to the destruction of many species of plants and animals, soil erosion, and the utilitarian approach that regarded water as a resource just “to turn turbines, float barges, and carry off sewage.”

Above all, his land ethic sought to change perceptions of the role of human beings from that of “conqueror of the land-community to plain member and citizen of it.” This would be based on love, respect, and admiration for the environment. There are strong parallels between the idea of a heightened awareness of the value of the “land” (which includes animals, plants, water, and the soil) and **biocentrism** and **spirituality**.

**THE LIMITS TO GROWTH.** This is the title of a book published in 1972 based on a study commissioned by the **Club of Rome** and written by Dennis L. Meadows, Donella H. Meadows, Jorgen Randers, and William W. Behrens III. The study tried to realize the Club of Rome’s goal to develop a better understanding of the complex interactions among economic growth, industrialization, environmental degradation, population change, and natural resources.

In its methodology, the study was deeply influenced by Jay Forrester who, in the 1940s and 1950s, developed a dynamic model of social and economic change. *The Limits to Growth* used computers and complex models to predict the pattern of economic change over the next century.

In their computer models, Dennis Meadows and his team examined four principal determinants of economic growth: **population growth**, pollution, industrialization, and natural resources. The study predicted that if the prevailing patterns of exponential economic growth were to continue, humankind would be faced with a catastrophe by the end of the 20th century. The

principal causes of the imagined calamity were a rapid depletion of resources, the threat to human existence by environmental pollution, massive shortages in the food supply, and rapid growth in world population.

The study went on to argue that these trends could be altered, particularly if there was a focus on sustainable systems of economic development and environmental protection. Among the main recommendations of the study were huge reductions in industrial and agricultural investment as well as a significant decrease in the birthrate and the transfer of wealth from more developed to less developed countries.

In both its assumptions and recommendations, *The Limits to Growth* was not dissimilar to concerns expressed during the previous century, notably by **Thomas Malthus** in *An Essay on the Principle of Population*. *The Limits to Growth* also appealed to people who, in the 1960s, had led or been influenced by the new wave of concern about environmental protection as well as the antiauthoritarian and anti-Vietnam War protest movements. The Club of Rome acknowledged that the report's findings were tentative; however, it welcomed the opportunity to engage the community in a heated debate about the implications of the study.

The report made an immense contribution to raising awareness of environmental issues. It also generated a great deal of opposition. The study was criticized for failing to consider how changes in technology, alterations in consumer behavior, and the discovery of new resources and forms of energy might avert the predicted outcomes. Although *The Limits to Growth* argued for a fairer redistribution of wealth and resources toward less developed countries, critics of the study were unhappy about what they regarded as an attempt by more developed countries to prevent less developed countries from attaining wealth and prosperity through economic growth. In the more developed countries, businesses were angered by recommendations for reduction in industrial growth.

Despite its serious shortcomings, *The Limits to Growth* stimulated awareness of the fragility of the environment, motivated many people to join social and political movements concerned about environmental issues, and eventually prompted changes in the behavior of consumers and in government policies. It also accelerated efforts to develop more efficient technology, look for new reserves of natural resources, and become more creative in dealing with environmental problems. *See also* SUSTAINABLE DEVELOPMENT.

**LIN, YI-HSIUNG (1941–)**. Lin is a Taiwanese politician, lawyer, leader of the democratization movement, and anti-nuclear activist. He was the lawyer in a case accusing the ruling authoritarian party of bribery in the 1976 election when Taiwan was still under martial law. In 1977, he was elected to the

Taiwan Provincial Council. As its chairman, Lin led the longtime opposition party, Democratic Progress Party (DPP), which won the presidential election in 2000. He left the DPP in 2006.

Lin has been an adamant supporter of the anti-nuclear movement. He ran a hunger strike in 1994 and launched long-distance silent demonstrations in 1994, 1997, 2002, and 2003. He had an important influence on the DPP's decision in 2000 to halt the ongoing Fourth Nuclear Power Plant project, though the DPP soon revoked its decision in 2001. In 2014, he launched a hunger strike again, and it inspired a series of anti-nuclear demonstrations. This forced the then ruling party, Koumintang (KMT, 國民黨), to change its policy and to suspend the still ongoing Fourth Nuclear Power Plant project. Lin also continues calling for a revision of the Referendum Act of 2003 to make referendums easier. *See also* TAIWAN.

**LOVE CANAL.** One of the most profound environmental disasters in U.S. history, the Love Canal tragedy helped spur new state and federal regulations during the 1980s regarding the proper disposal of toxic chemicals and other forms of hazardous waste.

In the 1920s, a half-dug canal in the area of Niagara Falls in New York was turned into a poorly designed and regulated dumpsite for municipal and industrial chemical waste. In the late 1950s, a working-class community of about 100 homes and a school was built on the former dumpsite. Twenty-five years later, the dumpsite began to leak. Eighty-two different chemical compounds, including 11 carcinogens, were identified. After one particularly heavy rainfall in 1978, corroding waste-disposal drums percolated up through the soil, spilling poisonous chemicals in backyards, basements, and on school grounds. Runoff drained into the Niagara River, 2.8 miles upstream of the Niagara Falls' water treatment plant, which served 77,000 people.

A resident of Love Canal, Lois Gibbs, led the Love Canal Homeowners Association in a struggle against the local, state, and federal governments to close down the community and relocate its families. President Jimmy Carter announced two environmental emergencies for the Love Canal area, resulting in the evacuation of 950 families from a 10-block area surrounding the landfill. In 1980, the site was declared an Emergency Declaration Area. Congress reacted to the Love Canal crisis by passing the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** superfund legislation in 1980. This legislation included an appropriation of US\$1.6 billion to clean up the nation's worst abandoned toxic- and hazardous-waste sites. The toxic-waste site at Love Canal has been treated but remains a large fenced-off area.



Love Canal. *Courtesy of Miranda Schreurs.*



Entry to Love Canal. *Courtesy of Miranda Schreurs.*

**LOVELOCK, JAMES.** *See* GAIA HYPOTHESIS.

**LUXEMBOURG.** In 1979, green groups formed an umbrella organization, the Alternative Leescht: Wiert Ich, to compete in elections. As in several other European countries, the formation of a green party in Luxembourg (Dei Greng Alternativ) was an effort to articulate at the electoral level the protests of social movements, notably those concerned about the development of nuclear power. The party was founded in 1983, and a year later gained 6.1 percent of the vote in elections to the **European Parliament**. In concurrent elections to the national parliament, two deputies won seats: Jean Huss with 5.7 percent and Jup Weber with 6 percent of the vote. The average across the nation was 2.9 percent. The main issues for supporters of Dei Greng Alternativ were nuclear power, damage to the environment caused by industrialization, and the corporatist structures for determining policies, which involved business, labor, and the state but appeared to exclude other groups.

Dei Greng Alternativ split into two parties in 1986; they merged again as “Dei Greng” in 1995. In the 1994 national election, the party won five seats, and since then Dei Greng has continually earned five to seven seats in national elections. After the 2013 national elections, in which Dei Greng won six seats, pulling in 10.1 percent of the vote, the party joined a three-party coalition government. Dei Greng took on three ministries: François Bausch became minister for mobility, spatial planning, and infrastructure; Felix Braz became minister for justice; and Carole Dieschbourg became minister for environment and climate. Also, Camille Gira was appointed secretary of state for **sustainable development**.

Decisions within the party are made at the district, local or regional, and national levels. Members at the district level elect representatives for the National Coordinating Group, a key body that oversees the democratic processes within the party and its financial and administrative affairs.

At the national level, there are three conventions, the National Convention (which has a broad agenda), the Full Convention (which takes place four times a year and focuses on specific policy issues), and the Extraordinary Convention.

Dei Greng, like Die Grünen in **Germany**, has practiced rotation of parliamentary delegates and party officers, stipulating that they may only serve a limited term in office. The aim is to ensure that power does not become entrenched. Parliamentary delegates are also subjected to the imperative mandate, a principle that is designed to make them accountable to members and decisions passed at the party conventions and to subject them to recall at any time. Delegates also have to give their parliamentary salaries to the party, which remunerates them according to its own formula. All of these issues caused great difficulty within the party.

Dei Greng espouses five core principles, **ecology**, **direct democracy**, social reforms, solidarity, and peace. The main emphasis in the party program has been on the consequences of industrialization, particularly pollution caused by the steel industry. However, Dei Greng has argued not so much for deindustrialization as for the exploitation of new opportunities and combining of development and environmental protection, for example, through the production of goods in ways that do not cause damage to the environment. Dei Greng has been critical of other aspects of **industrial society**, notably vehicle pollution, destruction of communities resulting from poor housing-development planning, and the inefficient use of energy, particularly the failure to develop renewable sources of energy. Apart from environmental issues, Dei Greng has focused on the rights of women and minorities and on democracy, particularly on how local communities can have a greater say in decisions about development. In 2019, the Greens won one of the six seats allocated to Luxembourg in the **European Parliament**. *See also* RENEWABLE ENERGY.





# M

**MAATHAI, WANGARI (1940–2011).** Born in **Kenya**, Wangari Maathai founded the **Green Belt Movement**, which since the 1970s has mobilized poor women to plant millions of trees in order to prevent soil degradation and slow desertification. The movement grew to become both an environmental and a women’s rights movement. Maathai was awarded a doctorate in 1971 from the University of Kansas. In 1976, she became head of veterinary anatomy and, in 1977, associate professor of anatomy at the University of Nairobi. In 1980, she was appointed chair of the Kenyan National Council of Women. In 1989, when she opposed plans to develop a huge multistory building in a park in the capital city of Nairobi, she angered the political authorities and in the following year was prevented from returning to her country after a trip overseas. She is the first African woman to be awarded the Nobel Peace Prize, which she received in 2004 for her efforts to promote **sustainable development**. In 2010, Maathai founded the Wangari Maathai Institute for Peace and Environmental Studies (WMI) for academic research on forestry, land use, and peace.

**MALAYSIA.** Environmental awareness is on the rise in Malaysia, but the economic development prerogatives of the government remain strong. While Malaysia is still one of the most forested countries in the world (about 60 percent of the land is covered in forests), deforestation rates continue at alarming levels.

During the colonial period, large areas of tropical forest were replaced with rubber plantations. Sabah and Sarawak, which were more isolated, did experience some logging during this period, but loss of forested areas was contained. This began to change in the 1970s and 1980s as **Japan’s** and other countries’ demand for wood increased, and logging concessions were handed out to politicians and their families. Logging concessions overlapped with the lands of Borneo’s indigenous tribes, which are collectively known as the *Dayak*. Clashes between the indigenous groups and the logging firms turned violent. After three tribes—the Penan, Kayan, and Kelabit—joined forces and blockaded logging roads, the government reacted by making the block-

ading of roads a criminal offense punishable by two years in prison and a fine of 6,500 Malaysian dollars. International nongovernmental organizations (NGOs) were also largely kept out at this time due to restrictive visa rules and fears of imprisonment. By the mid-1990s, international pressure on Malaysia was becoming increasingly strong, and NGOs shifted their efforts to include applying pressure on importing states to buy only lumber from sustainable forests. One victory was the decision by the Malaysian and Indonesian governments in 1994 to establish one of the world's largest wildlife sanctuaries on Borneo, the Betung Kerihun National Park.

The United Nations found deforestation rates were accelerating faster in Malaysia than in any other tropical country in the world. Between 1990 and 2010, Malaysia lost about 8.6 percent of its total forest cover. A major source of the problem is palm oil plantations. Sahabat Alam Malaysia (SAM)/ **Friends of the Earth** Malaysia has worked to prevent the destruction of tropical rainforests. Founded in 1978 by S. Mohamed Idris, the main focus of the group's work has been in Sarawak, where indigenous people such as the Kayan, Penan, and Pelabit have been engaged in an enduring struggle with logging companies. In the 1980s, the rapid destruction of the forests led to blockades by native people of routes used by the logging companies. SAM assisted in these campaigns to defend the lifestyles and livelihood of the indigenous people and ensured that their concerns received a huge amount of publicity across the world. SAM was also involved in legal battles over the land rights of the native people. Apart from these campaigns, SAM has focused on issues such as resource depletion, soil pollution, and reporting on the state of the environment through its publications.

Malaysian Environmental NGOs (MENGO), an association of environmental organizations active in Malaysia, was formed in 2001 with the support of Danish International Development Assistance. The aim of MENGO is to strengthen the voice of Malaysian NGOs in decision making at all levels. As of 2018, it had 31 members. A look at the membership suggests a growing diversity of groups working on green issues in Malaysia: Biji Biji Initiative, Blue Life Ecoservices, Borneo Resources Institute Malaysia, Camp Borneo, Ecocentric Transitions, EcoKnights, eHomemakers, Environmental Management and Research Association of Malaysia (ENSEARCH), Environmental Protection Society Malaysia, Future Alarm Borneo, Global Environment Centre, Green Earth Society, Jaringan Orang Asal SeMalaysia, Landskap Malaysia, Malaysian Karst Society, Malaysian Green and Blue Environmental Protection Society, Malaysian Nature Society, Malaysian Society of Marine Sciences, Partners of Community Organisations Sabah, Penang Institute, Reef Check Malaysia Bhd, Sabah Wetlands Conservation Society, Sustainable Development Network Malaysia, Tatana Roots, TRAFIC Southeast Asia, Treat Every Environment Special Sdn Bhd (TrEES), Tropical Rainforest Conservation and Research Centre, Wetlands Interna-

tional, World Wide Fund for Nature Malaysia, Water Watch Penang, and Yayasan Anak Warisan Alam. MENGO works to collaborate and provide services to the government, raise environmental awareness, empower ordinary citizens, and act as an environmental watchdog. In addition to established groups such as these, environmental groups targeting specific issues have emerged. For example, in 2011, residents around the proposed Lynas Advanced Materials Plant (LAMP), a rare earth refinery in Kuantan, organized the “Save Malaysia Stop Lynas” campaign to highlight their concerns about radiation from the refinery. The campaign led to the creation of Himpunan Hijau (Green Assembly). Although the campaign did not stop the Malaysian government from issuing a license to the refinery, the Save Malaysia Stop Lynas campaign and the following Himpunan Hijau movement are signs of the growing awareness of environmental problems in Malaysia. Beyond these groups, there is a fledgling Green Party in Malaysia, founded in 2010. It has its own YouTube site.

**MALTA.** The tiny islands of Malta, which have a population of less than half a million, joined the European Union (EU) in 2004. Malta has a green party, the Democratic Alternative, which was founded in 1989. The party has not, however, performed well in national general elections (1.69 percent in 1992, 1.7 percent in 1996, 1.5 percent in 1998, 0.7 percent in 2003, 1.31 percent in 2008, 1.8 percent in 2013, and 0.8 percent in 2017), but they have had representation in the local councils of Sliema, Sannat, and Swieqi.

**MALTHUS, THOMAS ROBERT (1766–1834).** In *An Essay on the Principle of Population* (1798), Thomas Malthus argued that a sharp increase in population (as experienced by the **United Kingdom** in the transition from an agrarian and feudal to an industrial economy) was likely to outpace the capacity of the community to provide itself with food. Should food be plentiful for the existing population, a further increase in the size of the population was unavoidable. However, if a community were unable to provide for a growing population, the consequences would include famine, disease, and armed conflicts. Malthus’s essay was used as the basis of an attack on the system of relief for the poor. It was argued that the poor laws increased the population, lowered the general standard of living, and raised the number of paupers. This in turn had a harmful social effect, undermining the spirit of independence of individuals and destroying their will to work hard.

Although these arguments are not widely accepted among environmentalists today, numerous influential thinkers picked up the basic concern about population growth: **Paul Ehrlich** addressed it in his book *The Population Bomb* (1968). Garrett Hardin’s “Tragedy of the Commons” and the **Club of Rome** report were greatly influenced by Malthusian concepts. Among the

measures proposed by some environmentalists to deal with the question of population are financial incentives to discourage procreation and educational campaigns to change beliefs and perceptions about this issue. In **China**, the idea was taken to a social extreme with the one-child policy (which has since ended, for the most part). Global population has indeed expanded dramatically since Malthus's time. In 1800, the population was an estimated 1 billion; in 1850, 1.2 billion; in 1900, about 1.6 billion; in 1950, about 2.5 billion; in 2000, about 6 billion; and in 2020, about 7.5 billion. Yet, in some countries, the Malthusian logic appears to have broken down. Many countries have already or are about to see the beginning of population decline: Belarus, Bosnia-Herzegovina, **Bulgaria, Estonia, Germany, Greece, Hungary, Italy, Japan, Latvia**, Lithuania, Moldova, **South Korea, Portugal, Romania**, and **Ukraine**, among others.

**MAN AND THE BIOSPHERE (MAB) PROGRAMME.** UNESCO launched the Man and the Biosphere Programme in 1971. It is an inter-governmental scientific platform providing unique opportunities for science to contribute to the improvement of the relationship between man and nature. The MAB Programme promotes research and education to address the interaction between the environment and human activity, encouraging greater scientific involvement in policy making. The program promotes the harmonious integration of people and nature for sustainable development through participatory dialogue, knowledge sharing, poverty reduction, and respect for cultural values.

Within the MAB Programme, member states are eligible to nominate biosphere reserves, areas that demonstrate innovative approaches to integrated nature conservation and sustainable development.

As of August 2019, the World Network of Biosphere Reserves included 686 sites in 122 countries, including 20 transboundary sites. Among them, African states have 79 biosphere reserves, Arab states 33, Asian and Pacific states 152, Europe and North America 292, and Latin America and the Caribbean 130.

**MCTAGGART, DAVID (1932–2001).** Born in Vancouver, Canada, David McTaggart was a leading badminton player in the 1950s. In the 1960s, he became a highly successful entrepreneur in the U.S. building industry. After losing most of his fortune, he sailed around the South Pacific before responding to an appeal by **Greenpeace** for supporters to participate in actions against nuclear testing by the French government at Mururoa. McTaggart led a group of activists into the nuclear test zone, drawing the ire of the French government, leading to serious assaults on the protestors, and succeeding in attracting immense publicity for Greenpeace. McTaggart went on to become

director of Greenpeace International and was largely responsible for ensuring that the organization developed a very high level of professionalism and competence in carrying out research and conducting campaigns over numerous environmental issues.

**MENDES, CHICO (1944–1988).** The son of a rubber tapper in **Brazil**, Chico Mendes followed his father's trade and then became the leader of a protest movement against the activities of developers, particularly cattle ranchers and settlers in the **Amazon** region in the 1970s. Although the activities by Mendes and his fellow workers were conducted on a sustainable basis—that is, they allowed for the renewal of the trees—the actions of the cattle ranchers had a devastating impact on the environment. Mendes conducted an electoral campaign in 1986 as a candidate of the Worker's Party and secured a significant proportion of the vote. In 1987, he focused his efforts on lobbying the U.S. Inter-American Development Bank, which was instrumental in providing funds to the developers for constructing highways through the Amazon region. He succeeded in persuading the U.S. Senate Appropriations Committee to reduce significantly the funds allocated to the bank on environmental grounds. He also persuaded the Brazilian government to create reserves to protect traditional extractive trades in the region. His successes prompted a violent response from the ranchers, who murdered him in December 1988. Mendes also inspired movements to organize in the defense of the rainforests.

**MEXICO.** Mexico's environmental movement began in the 1980s with the formation of the country's first environmental nongovernmental organizations (NGOs). These early green groups rallied and mobilized around specific environmental issues, such as Mexico City's air pollution problem and the construction of Mexico's first nuclear power plant. While they achieved little success early on, these nascent groups facilitated the emergence of a much larger and more powerful environmental community over the next two decades.

The environmental movement gained crucial momentum during the 1990s with the North American Free Trade Agreement (NAFTA), which created a free trade area among the **United States**, Mexico, and **Canada**. Pressure from environmental groups in all three countries, coupled with U.S. and Canadian concerns regarding the potential negative trade implications of Mexico's lower environmental standards, forced the incorporation of an environmental agreement into NAFTA. In the following years, this environmental aspect of NAFTA substantially strengthened Mexico's green groups

by facilitating cross-border cooperation and forging alliances between Mexican NGOs and their stronger, more established, and better funded American counterparts.

Mexico's environmental movement has seen some successes. President Ernesto Zedillo's permanent veto of a proposed salt production plant that would have endangered the welfare of the gray whale in 2000 demonstrated the growing influence of green groups in policy formulation. However, although the environmental movement made considerable gains, it continues to be confronted with a number of challenges. Co-optation, oppression, and the Mexican government's providing varying levels of access to different groups have contributed to the fragmentation of the environmental community, which in turn has hindered cooperation and organization. In addition, lack of access to information and inadequate funding has severely impeded the progress of Mexico's environmental movement.

The Ecologist Green Party of Mexico (Partido Verde Ecologista de México [PVEM]) was officially registered in 1991. It received 1.4 percent of the proportional representation vote for federal deputies in 1994 and 3.8 percent in 1997. It did sufficiently well in 1997 to elect one senator (the first in the Western Hemisphere) and eight deputies. It also did well in local and mayoral elections. In 2000, the National Action Party, a conservative, business-friendly party, formed an alliance with the PVEM (the Alliance for Change), and successfully backed Vicente Fox from the Institutional Revolutionary Party (PRI) for president. The party also won five seats to the Senate. Fox did not make many environmental promises during his campaign, although he did call for making water and forests matters of national security. The alliance broke down one year into Fox's presidency. In the 2003 Chamber of Deputies election, the PVEM allied this time with the PRI. The PVEM was able to send 17 representatives to the Chamber of Deputies. In the 2006 presidential election, PVEM entered an alliance with the PRI and both backed Roberto Madrazo as their candidate.

PVEM's record has not been without issue. The federal electoral tribunal found the PVEM in violation of the electoral code and the Constitution because of its restricted list of candidates and officials (most of whom came from one family). It was also fined for campaign offenses in the 2000 presidential election. The party has been criticized for not showing much commitment to pushing a green agenda and for numerous corruption scandals. After the party's initiative to reintroduce the death penalty in 2009, the European Green Party (EGP) withdrew its recognition of the PVEM as part of the Green Family. The PVEM has nevertheless persisted, gaining 34 seats in the Chamber of Deputies in 2012, 47 seats in 2015, and 17 seats in 2018 and gaining 9 seats in the Senate in 2012 and 7 in 2018.

**MILJØPARTIET DE GRØNNE.** *See* NORWAY.

**MILLENNIUM DEVELOPMENT GOALS.** In September 2000, the UN adopted the “United Nations Millennium Declaration” at its headquarters in New York. With a deadline of 2015, the parties to the declaration committed to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets—the Millennium Development Goals. The eight goals are: to eradicate extreme poverty, achieve universal primary education, promote gender equality and empower women, reduce child mortality, improve maternal health, combat HIV/AIDS and other diseases, ensure environmental sustainability, and promote global partnership for development.

Although there were major advancements, progress toward achieving the targets is incomplete and uneven among countries. The share of the world’s population living in extreme poverty has shrunk from about half of the people living in developing countries but was still at about 14 percent in 2015. About half of the world’s population still lives on an income of about \$2.50 per day. While females’ access to education has improved, gender inequalities persist. Sanitation and piped water availability has expanded, but gains made in these areas are being offset by the damage caused by **climate change**. In response to the demands of developing countries, in 2015 the United Nations **Sustainable Development Goals** (SDGs), also known as the “Post 2015 Development Agenda,” were launched. *See also* SUSTAINABLE DEVELOPMENT GOALS (SDGs); WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT.

**MIYAZAKI, HAYAO (1941–).** Miyazaki is a Japanese anime director, animator, manga artist and cofounder of Studio Ghibli. He won his first Japan Academy Prize for *Princess Mononoke* in 1998, and his *Spirited Away* is a winner of numerous awards: the Berlin International Film Festival 2002 Golden Bear Award, Japan Academy Prize 2002, Academy Award 2003, and Annie Award 2003. He was awarded the Japan Academy Prize 2002 Honorary Award, Venice International Film Festival 2005 Golden Lion for Lifetime Achievement, and Academy Honorary Award 2014. Many of Miyazaki’s works are commercially successful, and *Spirited Away* has been the highest grossing film in Japan.

In his works, Miyazaki shows his deep concern about the relation between human beings and nature. Nature is not merely something to be exploited by human beings but is something nearly sacred, which should be protected. Nature is powerful; its reaction to human behaviors can be ruthless and overwhelming. Humans, his stories suggest, must find ways to coexist with nature by paying respect to nature. Human beings yearning for tranquil and primitive nature, where worries and sins can be washed away by clear water and fresh air, are themes that appear frequently in Miyazaki’s works. Miyazaki’s work also reflects antiwar thoughts and includes strong oriental elements.

Miyazaki supports anti-nuclear movements and has supported developing **renewable energy**. Studio Ghibli, which has produced Miyazaki's works since 1985, began calling for an end to nuclear power after the 2011 Fukushima Daiichi nuclear disaster. In 2015, Miyazaki launched and sponsored an ecological-park project on Kume Island, Okinawa, Japan. In the same year, he became the cohead of the Henoko Fund, which is dedicated to closing the U.S. Marine Corps Air Station on Okinawa. *See also* ANTI-NUCLEAR PROTESTS; FUKUSHIMA NUCLEAR DISASTER, JAPAN; JAPAN.

**MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER.** The Montreal Protocol to the **Vienna Convention for the Protection of the Ozone Layer** established target dates and reduction levels for various chemical substances that contribute to the depletion of the **ozone layer**. The ozone layer protects the Earth from the sun's harmful ultraviolet rays. The protocol was signed in 1987 by 47 nations; over 120 nations have since ratified it. It entered into force in 1989. It has since been amended five times—in 1990, 1992, 1997, 1999, and 2016—to accelerate the phase-out of some chemicals and to add other chemicals to the list requiring phase-out. The initial convention agreed to reduce annual production of **chlorofluorocarbons (CFCs)** by 50 percent of 1986 levels by June 1999, return halon production to 1986 levels by early 1992, allow developing countries up to 10 additional years to comply with deadlines, restrict chemical trade with nonsignatory countries, and create a fund to assist developing countries' implementation of the treaty.

The Montreal Protocol is widely considered one of the most successful global environmental agreements. Levels of CFCs and other chlorinated hydrocarbons in the stratosphere have either leveled off or decreased, while halon concentrations have increased at a slower pace and are expected to decline by about 2020. There have been relatively few attempts to smuggle CFCs from undeveloped to developed nations, and the number of countries involved and compliance levels have been high, although recent reports suggest illegal use of CFCs in the plastic foam industry in China persisted. Arrests were made in 2018.

The Kigali amendment to the Montreal Protocol is the most significant expansion of the agreement to date. It was achieved during the Barack Obama administration and sets a phase-down schedule for hydrofluorocarbons, substitutes that were introduced to replace CFCs but which are themselves substances with extremely high global warming potential. The Kigali amendment introduces different target years for the phase-out to begin based on countries' development status: for the United States and the European Union, 2019; for **China, Brazil,** and South Africa, 2024; and for the world's hottest countries (Bahrain, India, Iran, Iraq, Kuwait, Oman, **Pakistan,** Qatar, Saudi



Arabia, and the United Arab Emirates), 2028. Estimates are that the phase-out in the use of HFCs could reduce the average global temperature rise by as much as 0.5 degrees Celsius by the end of this century.

**MOVEMENT FOR THE SURVIVAL OF THE Ogoni People (MOSOP).** *See* SARO-WIWA, KENULE (1941–1995).

**MUIR, JOHN (1838–1914).** Born in Dunbar, Scotland, John Muir moved with his family to Wisconsin in 1849. In 1863, after three years at the University of Wisconsin, where he did well but did not complete his studies, he began to travel around the **United States**, taking on casual jobs and exploring the countryside. Beginning in 1867, following a serious eye injury from which he recovered, he embarked on lengthy journeys across America, before settling in California, first in San Francisco and then in Yosemite. In 1874, he became well known as a writer of “studies in the Sierra.” His interest in travel extended to numerous journeys to Alaska as well as trips to South America, **Australia**, Europe, and Africa.

Muir became a prolific writer, focusing on his travels, the dangers to the natural environment, the need for protection and **preservation** of nature, and the spiritual qualities of the wilderness. He played a central role in the campaign that led to the creation of Yosemite National Park in 1890. In 1892, Muir and other preservationists formed the **Sierra Club** to protect areas like Yosemite National Park as well as the Petrified Forest and Grand Canyon National Parks in Arizona. Muir was elected the first president of the club and guided it through several important campaigns until his death in 1914. In 1903, President Theodore Roosevelt went to visit Muir in Yosemite and undertook several plans for **conservation**. *See also* NATIONAL PARKS.



# N

**NAESS, ARNE.** *See* DEEP ECOLOGY.

**NAGOYA PROTOCOL.** *See* CONVENTION ON BIOLOGICAL DIVERSITY (CBD).

**NARMADA DAM.** The government of **India** established plans to capture the power of the Narmada River and its tributaries for electricity generation and irrigation of drought-prone areas such as Gujarat, Kutch, Saurashtra, and North Gujarat with a series of 30 large, 135 medium-sized, and several thousand small dams. The tallest and most controversial of the dam projects is known as Sardar Sarovar, one of the largest dams in the world. The approved height of the dam steadily shifted upward. In 2006, height extensions were approved to 121 meters. In 2014, the Narmada Control Authority gave the final clearance to raise the height to 136.68 meters. Construction of the dam has required displacing tens of thousands of individuals. Local and international protests against the construction of the dams have been extensive. The World Bank, which had initially funded a portion of the dam project, withdrew its support in the early 1990s.

A powerful new movement arose in India in reaction to the dam. The Narmada Bachao Andolan (Save the Narmada Movement) led by Medha Patkar became the largest **nonviolent** peoples' movement in India and claims to speak for the hundreds of thousands of indigenous peoples and peasants who would be displaced by the series of dams. The Indian Supreme Court criticized Narmada Bachao Andolan in 1999 when the court ruled in favor of the government's plan to build the dam. The court also ruled, however, that construction of the dam had to stop until those who were being displaced received rehabilitation. In 2013, heavy rains raised the reservoir and forced 7,000 villagers along the Narmada River to relocate. President Modi inaugurated the dam in September 2017. Narmada Bachao Andolan continues to protest the construction of dams along the Narmada River and to fight for the rights of those who are being affected by the construction of the dams. The group also works to promote alternative energy and the empowerment of

women. The Friends of River Narmada, an international group of individuals and organizations largely of Indian descent, and the International Rivers Network have supported the work of Narmada Bachao Andolan.

**NATIONAL AUDUBON SOCIETY.** Founded as a national organization in the **United States** in 1905, the National Audubon Society was named after the naturalist John James Audubon. Audubon was the renowned author of *Birds of America*, completed in 1837. The Audubon Society was first formed in New York in 1886 with the aim of preventing poaching and hunting of birds and wildlife, and it gained public attention during a campaign to prevent the use of birds' feathers in hats. It has since grown into an organization with 600,000 members, 500 community-level chapters, and offices in 27 states in the United States. The Audubon Society engages in the protection and restoration of wildlife habitats and promotes policies that safeguard birds and other wildlife.

**NATIONAL PARKS.** The first efforts to set aside natural areas for conservation occurred in cities. In 1853, New York City authorized the creation of Central Park. Frederick Law Olmstead Jr., who designed Central Park, was inspired by what he had seen at the Birkenhead Park in Merseyside, United Kingdom. Birkenhead Park was opened in 1847 and is considered by some as the world's first public park. Also, Olmstead first proposed that Yosemite should become a protected area in 1865.

**John Muir** was the first nature writer to form his ideas into a political ideology, and he was successful in advocating efforts to establish parks such as Yellowstone and Yosemite, as well as for a national park system and for preservation of wilderness. **Preservationism** grew with the popularity of outdoor recreation clubs but, while influential, like **conservationism**, it was essentially the concern of the upper class.

The conservation and preservation movements both contributed in different ways to the establishment of a national parks system. **Yellowstone National Park** was created as the world's first national park in 1872. Newly emerged environmental groups played an important role in putting forward efforts to protect nature. The **Sierra Club**, a California hiking society founded in 1892 by John Muir and Robert Underwood Johnson, lobbied for protection of wild areas. Other groups, such as the National Federation of Women's Clubs, mobilized women around conservation and preservation, in 1904 petitioning Congress to save California's Calaveras Grove of Big Trees, and in 1913 winning a long campaign, in conjunction with the **National Audubon Society**, to ban exotic bird feathers in hats. In 1919, the National Parks Conservation Association was formed to enhance the national parks system. Two other major environmental groups that formed and played a role

in promoting nature conservation were the **Wilderness Society** (founded by preservationist Robert Marshall and conservationist **Aldo Leopold**) and the **National Wildlife Federation**, established respectively in 1935 and 1936.

The American environmental movement benefited greatly from President Theodore Roosevelt's enthusiasm for hunting and the out-of-doors. He was a great supporter of Gifford Pinchot's conservationism. Roosevelt believed that conservation was necessary to protect the long-range prosperity of the country. In 1903, Roosevelt joined Muir on a hike in the Yosemite Valley and became more open to preservationist lobbying, later introducing a bill to prevent exploitation and damage in the park. In 1908, he convened the first Governors' Conference on Conservation and established the National Conservation Commission.

The environmental movement in the **United States** was by no means always united in its efforts to set aside land. Tensions between preservationists and conservationists escalated in 1908 when the mayor of San Francisco planned a dam and reservoir in the Hetch Hetchy Valley in central California in order to supply water to the Bay Area metropolis. In this case, Gifford Pinchot supported utilization of the resource, while Muir condemned it as undermining the significant aesthetic value of the valley. President Woodrow Wilson signed the dam into law in 1913, but the controversy was important in establishing the National Park Service under Stephen Mather in 1916.

These competing views—use versus preservation—have colored many local debates regarding the use and preservation of land. The establishment of Everglades National Park in 1934 was a victory for preservationists, as the area was marked for protection not so much because it was monumental or splendid but rather because it was considered ecologically important and an important wildlife habitat. As of 2018, there were 417 national park sites in the United States of which about 60 are national parks.

The national park movement quickly spread to other countries around the world. **Australia** established Royal National Park as the world's second national park in 1879. Australia now has more than 500 national parks covering 28 million hectares. **Canada** established the third, Banff National Park, in 1885 and now has 47 national parks and national reserves, covering about 3.3 percent of the national land area. **New Zealand** established the fourth, Tongariro National Park, in 1887 and now has 13 national parks. **Sweden** was the first European country to pass legislation for the protection of nature when it established nine separate parks in 1909. The Swiss created their first national park in 1914. Interestingly, while many European countries had already established historic preservation sites in the first half of the 20th century, most did not create their first national park until after World War II. France established its first national park, Vanoise, in 1963.

Greenland National Park is the world's largest park. Australia has the world's largest marine protected area, the Great Barrier Reef Marine Park, established in 1975. The second largest is the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve. **Brazil** established the world's largest tropical-forest park in 2002, the Tumucumaque National Park. According to World Bank data, in 2014 the countries with the highest percentage of their land under protected status are: Venezuela (53.9 percent), Slovenia (53.6 percent), Monaco (53.4 percent), Bhutan (47.3 percent), Turks and Caicos Islands (44.4 percent), Liechtenstein (44.3 percent), Brunei Darussalam (44.1 percent), the Seychelles (42.1 percent), Hong Kong (41.8 percent), and Greenland (41.2 percent).

The **International Union for the Conservation of Nature (IUCN)** organizes the World Congress on National Parks and Protected Areas every decade. The first was held in Seattle, Washington, in 1962; the second in Yellowstone in 1972; and the third in Bali, **Indonesia**, in October 1982. At the fourth world congress (Caracas, Venezuela, 1992), a goal to expand the world's protected areas to cover at least 10 percent of each major biome by 2000 was proposed. This is one of the few global green goals that has actually been met and even exceeded. At the fifth world congress (Durban, **South Africa**, 2003), it was announced that protected areas stood at 11.5 percent of the Earth's land surface. The congress led to the Durban Accord and Action Plan and noted that protected land area has doubled since 1992, now covering 12 percent of total land area (10 percent of which is strictly protected area in Antarctica), and that there had been an increase from 101 to 172 of World Heritage and mixed properties. Still, the congress saw many problem areas. The most important recommendation they made was to link protected areas to enhance their biodiversity-conservation potential. The meeting also led to the UN List and State of the World's Protected Areas and a global report on the world's protected areas. The 2014 World Congress was held in Sydney, Australia, and focused on innovative approaches to reaching conservation goals, responding to **climate change**, improving health and well-being, supporting human life, reconciling development challenges, enhancing diversity and quality of governance, respecting indigenous and traditional culture and knowledge, and inspiring a new generation.

The United Nations **Sustainable Development Goals (SDG)** and the **Convention on Biological Diversity** also play a critical role in supporting **biodiversity** in national parks and other protected areas. SDG Goal 14 and the Convention on Biological Diversity Aichi Biodiversity Target 11 seek to protect at least 10 percent of oceans by 2020. The Aichi Biodiversity Target 11 seeks to have at least 17 percent of terrestrial and inland water areas, especially areas of importance for biodiversity and **ecosystem services**, under conservation status.

The establishment of marine and terrestrial protected areas is an important step. How biodiverse these areas are and whether enough is done to really protect the ecological systems within them is an open question. Many protected areas are concentrated in uninhabited areas, and some have relatively low ecosystem value. Establishing national parks and protected areas does not ensure that poachers will not shoot valuable game, fishers will not fish, miners will not illegally mine, and illegal logging will not damage these areas. These have been serious problems in many parts of both the developed and the developing world.

**NATIONAL PARKS CONSERVATION ASSOCIATION.** Established in 1919, this nonpartisan association with a million members and supporters works to address major threats to the National Park System in the **United States**. The association has lobbied against plans by the Donald Trump administration to weaken water protection rules.

**NATIONAL WILDLIFE FEDERATION.** With six million members and supporters as of 2019, the National Wildlife Federation (NWF) is one of the largest environmental groups in the world. At the urging of Ding Darling, an Iowa cartoonist with a love for nature, President Franklin Roosevelt convened a meeting of more than 2,000 conservationists for the first North American Wildlife Conference in Washington, DC, in 1936, where the General Wildlife Federation was formed. Two years later, it changed its name to the National Wildlife Federation. The NWF is one of the most influential NGOs working on a variety of conservation issues in the **United States** and internationally, in part, because of its ability to work across parties at the highest political levels. It has a strong educational component and supports many kinds of conservation activities. *See also* CONSERVATIONISM; NATIONAL PARKS; PRESERVATIONISM; UNITED STATES OF AMERICA.

**NATURAL RESOURCES DEFENSE COUNCIL (NRDC).** Established in 1970 by John Adams, the NRDC has grown to a base of three million members and online activists. NRDC has campaigns addressing clean energy, **global warming**, clean water, wildlife, parks, forests, wild lands, health, nuclear weapons and waste, green living, and U.S. and international laws and policies. With a staff of environmental lawyers and scientists, NRDC is one of the most influential environmental groups in the **United States**. It also works in many countries around the world and has inspired other groups to follow its lead in using litigation as a means of advancing environmental policy. The NRDC has been active in helping **China** develop meaningful environmental legislation and in building the capacity of governmental actors

and environmental-group leaders. Much of its work in China has focused on helping the country begin an energy transition away from coal through new policies and approaches, including cap and trade systems. In **India**, it has similarly worked on promoting clean energy and public health solutions.

**NATURE CONSERVANCY.** The primary objective of the Nature Conservancy is to buy land to protect it. Formed in 1951 in the **United States**, the organization has been able to protect over 119 million acres, which include over 1,000 sanctuaries and many endangered species. Its nonconfrontational approach to environmental protection has made it attractive to the more conservative members of American society. In 1995, the Nature Conservancy had over 600,000 members. A decade later, its membership had grown to over one million. The Nature Conservancy is active in countries around the world. It created a water fund in Quito, Ecuador. It has worked to secure forest habitat for endangered chimpanzees and create sustainable fisheries on Lake Tanganyika in Tanzania. It has assisted **China** in developing a national conservation plan. The group partnered with the Dow Chemical Foundation to develop tools helpful for businesses in deciding how to value nature in their business plans.

**NETHERLANDS.** Although, as in other advanced industrialized nations, there is a strong awareness of environmental problems and significant support for social movements around issues like nuclear energy development, there have been many obstacles to successful implementation of environmental-protection measures in the Netherlands. Economic development in the 1950s and 1960s led to considerable air and water pollution. The location of petrochemical industries further contributed to these difficulties. In addition, the Netherlands has both contributed to and been the recipient of pollution flowing through the Rhine River.

Another major problem has been how to deal with the consequences of the enormous success of the agricultural sector in producing more livestock (notably cattle, pigs, and poultry), relative to the territory available, than any other country in the world. The principal difficulty is damage caused by nutrients from manure generated by the livestock. Nitrogen and phosphate have damaged surface waters and groundwater and have contributed to air pollution in the form of ammonia emissions.

The Netherlands has a strong environmental movement represented by well-known groups such as **Greenpeace** (the international office is located in Amsterdam), Milieu Defensie (**Environmental Defense Fund**), and Stichting Milieu en Natuur (Society for Nature and the Environment); by groups with a connection to the church, such as Werkgroep Kerk en Milieu (Working Group Church and Environment) and Time to Turn; and by more radical



groups, such as Vrienden van Groenfront! (Friends of the Greenfront!). The growth of the environmental movement helped to transform the Netherlands into an increasingly green-oriented country.

In the early 1970s, concern about air and water pollution caused by heavy industry led to the formation of the Ministry for the Environment and the introduction of the **polluter pays principle**. In addition, subsidies and levies were introduced to fund new technologies to deal with contamination and assist with the regulation and inspection of levels of pollution. Public opinion was generally supportive of these measures, as was the Christian Democratic Party, which dominated the coalition governments that had to be formed within the multiparty system. Although environmental groups attracted many supporters and sympathizers, green political organizations were unable to exert a great deal of influence in the 1970s and 1980s due to their fragmentation and the particular circumstances surrounding their development.

Pressure on the major parties to address concerns about the environment resulted in the government's 1989 National Environmental Policy Plan. The plan put the Netherlands at the forefront of green planning by integrating all environmental issues into a single ecosystem-based policy, and linking this to public health and the economy. The plan recommended targets for reducing pollution, particularly **acid rain**, and for dealing with the depletion of the **ozone layer**. Other proposals were about how to drastically reduce pesticide use and handle hazardous-waste transport. The government used the findings of the **World Commission on Environment and Development (WCED)** on **sustainable development** to justify drastic action. The plan has since been modified several times. The focus has shifted increasingly toward the use of consultative decision making through target-group consultation and the establishment of covenants (voluntary agreements among stakeholders). Market-based mechanisms are also increasingly coming into use, such as with the use of **emissions trading**. More than 250,000 firms are involved in the plan through performance-based covenants that they reach with the government, addressing matters such as **climate change**, energy efficiency, air and water pollutants, resource **recycling**, and the like. The fourth National Environmental Policy Plan (2001) focuses on dealing with climate change (through energy-efficiency improvements), agriculture and **biodiversity**, and natural resources.

In reacting to the **2 degrees** goal, the government launched several national measures on climate change. Its Climate Agenda points out two main purposes: to prevent further climate change as much as possible and to nationally and internationally adapt to its expected consequences. The government established an energy agreement with over 40 public and private organizations committed to the Dutch Energy Agreement for Sustainable Growth in 2013, with the aim to provide a long-term perspective on energy and climate policy, and to create trust and reduce investment uncertainty for

citizens and business. Additionally, the Incentive Regulation for Sustainable Energy (to stimulate the production of sustainable energy with a focus on companies and nonprofit institutions); Delta Program (to prevent flooding and to ensure sufficient freshwater); and Green Deals (to assist local authorities and communities in making a sustainable step) were launched as part of the government's measures on climate change.

Despite these initiatives, there was strong criticism from environmental groups that the Dutch government was failing to take the steps necessary to meet its climate change responsibilities. In a historic legal case, the Urgenda campaign, led by Marjan Minnesma, sued the Dutch government for not doing enough to protect its citizens from climate change, especially given that much of the Netherlands lies below sea level and climate change could precipitate dramatic increases in sea level. Although the Dutch government appealed a lower court decision requiring it to do more to cut emissions, an appeals court ruled in favor of the Urgenda campaign. The Dutch government must now either reduce emissions by 25 percent by 2020 (as of 2018, emissions had only been cut by about half this amount) or appeal to the Dutch Supreme Court. The appeals court decision could require the government to shut down a newly built coal-fired power plant or take other far-reaching actions. The Urgenda case has inspired similar movements in other countries, including **New Zealand**, **Norway**, **Uganda**, and the **United Kingdom**.

The Netherlands was one of the stronger proponents within the European Union (EU) calling for action to address climate change. It was a strong proponent of the **Kyoto Protocol**. To meet its Kyoto goals, the Netherlands combined an emphasis on local initiatives, covenants with industry, emissions trading, and **joint implementation**.

There is a green political movement in the Netherlands. Two green parties formed in the 1980s. The first, De Groenen (The Greens), was founded in December 1983 and has generally failed to make much of an impression in elections. The second, Groen Links (Green Left), was an electoral alliance of left-wing parties in 1989, before turning itself into a new political party in November 1990. The history of the two organizations and the parties that existed prior to the formation of Groen Links are closely linked.

Although Groen Links was formed much later than De Groenen, it was composed of political organizations that arose much earlier. De Groenen was formed in 1983, partly as a reaction to the possibility that these (left-wing) organizations would exercise considerable influence over the direction of green politics. However, De Groenen failed to prevent this; the political organizations that came to form Groen Links comprised the left-wing political parties feared by De Groenen. They included the Communist Party of the Netherlands; the Pacifist-Socialist Party, which had gained seats in parliamentary elections since the 1950s; and the Political Radical Party, which had

been formed in 1968 and had been represented in Parliament since the early 1970s. Another minor party that joined this group was the Evangelical People's Party, founded in 1981.

The Pacifists opposed the military and began to engage in protests against environmental destruction in the 1960s. The Radicals also concentrated on environmental issues. Both Pacifists and Radicals objected to the development of **nuclear energy** in the 1970s. Nonetheless, each of the minor parties in Groen Links retained its adherence to particular ideologies. The Communists remained loyal to many of the tenets of Marxism and Leninism. The Radicals and Pacifists espoused libertarian ideas. The main impetus to the merger of these parties was the growing evidence of their decline and the hope that they would make a far better showing in electoral politics as a united group. The combined membership of these political organizations had declined from a peak of around 36,000 in 1981 and 1982 to about 18,000 in 1989.

The existence of fairly coherent, small, left-wing parties made it difficult for De Groenen to establish itself as an influential minor party. In elections to the **European Parliament** in 1984, De Groenen polled 1.3 percent of the vote, whereas the coalition of left-wing minor parties, which then called itself the Groen Progressief Akkoord (Green Progressive Accord), secured 5.6 percent of the vote and two seats in the European Parliament. In the 1986 national elections, De Groenen polled only 0.2 percent of the vote; in 1989 0.4 percent; and in 1994 only 0.1 percent. Its biggest success was the election of Martin Bierman, one of the party's founders, to the Senate in 1995. In 1988, the party won no seats, however. Given its weak showing in elections, there was a proposal in November 2000 to form a Groenen Brug (Green Bridge) with Groen Links, but the membership rejected the proposal. Instead, they opted to cooperate with local, independent green branches. This strategy failed the party, however, and so it again sought to create an identity as an independent party.

By contrast, Groen Links has done reasonably well in elections, although it has been on a bit of a rollercoaster ride in terms of its performance. It secured 4.1 percent of the vote and 6 seats in the 1989 elections. In municipal elections in 1990, Groen Links obtained an impressive 300 councilor seats. The party won 5.2 percent in provincial elections in 1991 and 5.2 percent in the Senate elections, giving it 4 seats. As in many other Western European green parties, the mid-1990s were a difficult time for Groen Links. In 1994, it polled only 3.5 percent in the parliamentary election, dropping down to 5 seats. In the European Parliament elections as well, the party lost a seat.

The party rebounded in 1998 under the direction of Paul Rosenmoeller. It won 11 seats in the Parliament. In 2002, however, Dutch politics took a noticeable shift to the right. Anti-immigrant sentiments were strong, and this buoyed the political fortunes of far-right politician Pim Fortuyn. His shock-

ing murder one week before the elections sent sympathy voters flocking to Fortuyn's party list. Groen Links had expected to do well in the election but instead lost one of its seats. The party's fortunes further deteriorated in a special election in 2003, when the party received only 5.2 percent of the vote and 8 seats. In the 2006 elections, the party dropped further to 4.6 percent (7 seats). At the European Parliament level, Groen Links secured 2 representatives. In the 2010 representative election, the party obtained 10 seats with 6.7 percent of the overall vote, but decreased to 4 seats in 2012. The situation was similar in the election results for the European Parliament. The party dropped from 3 to 2 seats in 2014. In the 2017 general election, however, Groen Links did remarkably well, winning 14 seats (9.1 percent) in the House of Representatives.

De Groenen's platform focuses on environmental issues and links them to notions of self-sufficiency, decentralization, and grassroots democracy. De Groenen has not, however, been able to overcome its own problems in establishing a coherent organizational structure or the perception that Groen Links represents a much more viable and credible platform for addressing environmental issues.

Groen Links attempts to combine diverse convictions (including beliefs about control by the state of many large enterprises, the withdrawal of the Netherlands from the North Atlantic Treaty Organization (NATO), and the introduction of a **guaranteed minimum income**) with many of the aspirations of green parties throughout the world. The dissolution of the minor parties that formed Groen Links and development of environmental policies in the 1990s indicate that concerns about the environment are likely to dominate the agenda of the new political formation. Supporters of Groen Links share many of the characteristics of supporters of many other green parties: most are younger and/or have high levels of formal education, and large proportions are employed in the public sector. *See also* DIRECT DEMOCRACY.

**NEW ZEALAND.** The Values Party, formed in May 1972 in Wellington, New Zealand, was the first green party in the world to be established at the national level and to champion both environmental protection and participatory democracy. At the November 1972 elections, it competed in 43 of the 87 electoral districts. It polled 3.9 percent of the vote in these electoral districts and 2.7 percent of the vote across the nation. In 1975, the party improved its performance, obtaining 5.2 percent of the total vote and attracting many former Labour Party supporters. The pinnacle for the Values Party, in electoral terms, was a 9 percent vote in the January 1976 Nelson by-election. Thereafter, the party went into decline, receiving 2.8 percent of the vote in

1978 and only 0.2 percent in 1981. By then many of its members had questioned the worth of competing in elections, especially in a simple-plurality electoral system that discriminated heavily against minor parties.

However, the Values Party had played a crucial part in directing attention away from the preoccupation with material prosperity and economic growth. The person primarily responsible for the formation of the party was Tony Brunt, a former journalist who, like many other young people, felt that traditional political organizations were failing to articulate the important issues of the day.

Support for the party came from young people with high levels of formal education and the upper-middle classes. It also came from former adherents of all the major parties, as well as from activists in radical left-wing political groups. Later, the adherents of the latter, especially in the city of Christchurch, began to exert a great deal of influence over the party.

In the early stages of its development, the party was influenced by ideas such as those propounded by the **Club of Rome**, the study *The Limits to Growth*, and the British publication “**A Blueprint for Survival.**” The 1972 party manifesto, *Blueprint for New Zealand*, adapted these ideas and focused on a wide range of **quality-of-life** issues, notably the depletion of nonrenewable resources, **population growth**, and the dangers associated with industrialization and technological change.

The party focused on the need for a change in values with less emphasis on affluence and more on the fulfillment of spiritual needs. The party denounced the old political system for its short-term approach to policy making and resorting to expediency and excessive focus on electoral contests. As regards environmental issues, during the 1972 election campaign, the Values Party mobilized opposition to the proposed development of a hydroelectric system that threatened Lake Manapouri on the South Island.

While this campaign helped to unify supporters of the party, the attempt to develop organizational structures presented a number of difficulties. Concern about participatory democracy and decentralization led to the party's near demise until a new constitution was formulated and implemented at the 1974 party conference. By 1978, there was concern among many members that the party, particularly the groups based in Christchurch, had moved too far toward bureaucratization and conventional organizational practices.

In parallel with these tensions over organizational structures were divisions over policy. The Values Party had begun with a strong focus on quality-of-life issues. This approach had been partly undermined by the economic considerations that came to dominate the national and international political agenda following the oil crisis of 1973. The group in Christchurch, which had always been interested in economic issues from a socialist point of view, attempted to focus on developing a party program covering a wide range of

economic and social questions. The kinds of issues addressed by social movements, such as campaigns against the introduction of nuclear power and restrictive laws on abortion, continued to play an important role.

The party was not very successful, either in forming alliances with social movements or in retaining the allegiance of key groups within its own ranks. In 1979, the group from Christchurch, led by Toni Kunowski, having failed to force the majority into adopting a more professional approach to the party organization and having been defeated in a contest for the leadership of the party, formed a separate political organization, the Socialist Network. The party never recovered from these divisions, even after it adopted the name "Values: The Green Party of Aotearoa." Finally, in March 1990, members of the party participated in the creation of a new political organization, the Greens. In 1996 the Greens ran in the elections as part of a coalition of parties called the "Alliance." This association secured 10 percent of the vote and a total of 13 out of 120 seats in the Parliament.

Apart from its own internal conflicts and difficulties, the Values Party was negatively affected by the ability of the Labour Party to adapt to issues such as the widespread opposition to nuclear power. However, the possibility remained for the revival of a green political organization. In the 1987 elections, the **anti-nuclear** stand of the Labour Party ensured its success in attracting environmentalists. However, in 1990 neither this issue nor the reform of environmental legislation could prevent the Greens from running in the elections. Although it had virtually no policies and refused to appoint leaders in the conventional sense, the new party polled 6.6 percent of the national vote, thus demonstrating the enduring strength of the green political movement. The Greens had also polled almost 20 percent of the vote in some electorates. The constant problem, however, was the electoral system, which made it very difficult for them to gain any formal representation.

In May 1990, the Values Party merged with several new green groups to form the Green Party of Aotearoa New Zealand. Six months later, it won 7 percent of the vote. However, the first-past-the-post electoral system, which was in place until a mixed-member proportional system was adopted in 1996, meant the party was unable to win representation in Parliament. As a result, the party decided it was necessary to align with other parties and helped found the Five Party Alliance, ensuring that the alliance had a strong focus on **sustainable development**. In the 1996 general election, the alliance succeeded in sending its first three green delegates to Parliament (Jeanette Fitzsimons, Ron Donald, and Phillida Bunkle). By this time, it also had 20 greens in local government, including the mayor of Dunedin. The alliance, however, did not survive after its founder left the party in 2002 along with other MPs. It disbanded in 2015.

Feeling the need to maintain an independent image, the Green Party decided to leave the alliance in 1997. This caused a split within the Green Party. Bunkle decided to remain with the alliance. The Green Party focused its 1999 campaign on safe foods, nature conservation, strong communities, and opposition to genetic engineering. In the end, the party won 5.2 percent of the vote and took seven seats. In 2000, the Green Party entered Parliament and, although not a member of the government, was able to influence budget decisions related to energy efficiency and the environment.

The party's fortunes improved over the next several elections, but then internal party infighting led to the resignation of party cochair Metiria Turei and the exit from the party of two MPs in 2017. Thus, although the Green Party increased its seats in Parliament to 9 in 2008 and 14 in both 2011 and 2014, it dropped back to 8 seats in 2017. Nevertheless, in October 2017, the Greens entered a confidence and supply agreement with the Labour Party, the first time the Greens won representation in government. Party coleader James Shaw was given the post of minister for climate change and statistics and associate minister of finance. Anne Genter became minister for women and associate minister of health and transport. Eugenie Sage was given the post of minister of conservation and land information and associate minister for the environment.

Beyond the Green Party, New Zealand is considered a relatively ecologically minded country. It ranks quite highly in Yale University's Environmental Performance Index (number 17 of 180 countries for its overall performance). *See also* DIRECT DEMOCRACY; SPIRITUALITY.

**NIGERIA.** In Nigeria, oil extraction began in 1907. By 1938, the British colonizers had given BP and Shell Oil licenses to explore for and remove oil across all of Nigeria. Oil production began in 1957, and the companies discovered the Bomu oil field on the land of the Ogoni people in 1958. Nigeria's economy quickly became dependent on oil exports, so after independence in 1960 the new government continued to allow foreign oil companies to dominate the oil market. Environmental damage during the next several decades included oil waste pits, damage to buildings through seismic surveys, burial of chemical waste that contaminated the groundwater and arable land, gas flaring, and oil spills. Pollution and exploitation gave birth to the **Movement for the Survival of the Ogoni People (MOSOP)**. Reacting to the politics of exploitation, Olisa Agbakoba founded the Green Party of Nigeria in 2003. The party changed its name to Citizens National Peoples Party (CNPP) at the national convention in 2005. In 2018, the Green Party nominated Sam Eke as its candidate for president at its 11th National Convention. *See also* SARO-WIWA, KENULE (1941–1995).

**NONVIOLENCE.** The principle of nonviolence is an axiom espoused by many green political organizations. Some people believe that green political activists should renounce all forms of violence in the manner suggested by Mahatma Gandhi and his followers in the campaigns against British rule in **India**. There have been numerous suggestions for how to put nonviolence into practice. Many green movements and parties espouse principles of peace and nonviolence although some parties have also recognized that there may be times when the use of force is necessary, for example, against genocide and terrorism.

**NORWAY.** Norway has benefited immensely from its oil and natural gas reserves. Unlike many oil-rich countries, it has a strong social-democratic orientation and has invested much of its oil and gas wealth in providing social services and environmental protection. As one of the richest countries in the world, Norway consistently ranks as one of the countries with the highest **quality of life** and strongest orientation toward **sustainable development**. It is perhaps little wonder that Norway's **Gro Harlem Brundtland** led the commission that produced the famous 1987 report *Our Common Future*. This report can be seen as a turning point in global awareness of the need to shift from current economic structures to more sustainable systems or risk severe ecological destruction and **climate change**.

Given the relatively high degree to which environmental matters have been incorporated into the agendas of the main political parties, it has been difficult for the Norwegian Greens to gain a toehold in the political system. Miljøpartiet De Grønne was formed in 1988 out of several local green lists. Although operating in a country that consistently ranks as one of the most sustainable in the world, the party had little success in establishing a unique image among voters before 2005. Since then, it has experienced a significant membership rise. In the 2013 general election, the party received the eighth largest number of votes, over 79,000 (2.8 percent), in the country, gaining one seat in the parliament, held by Rasmus Hansson. He kept his seat in the 2017 election. As with many other green parties and as a member of the European Green Party, Miljøpartiet De Grønne's platform is based on such ideas as promotion of **grassroots democracy**, environmental protection and sustainability, locally based and sustainable economies, ecological farming, and public transportation. Miljøpartiet De Grønne seeks to reduce the country's petroleum extraction and stop it by 2033, and to increase subsidies for green industries in reacting to climate change. The city of Oslo, where the Green Party is strong, was awarded the status of European Green Capital 2019. It is also a leader in the introduction of electric vehicles.



**NUCLEAR ENERGY.** *See* ANTI-NUCLEAR PROTESTS; CAMPAIGN FOR NUCLEAR DISARMAMENT (CND); CHERNOBYL; FUKUSHIMA NUCLEAR DISASTER, JAPAN.



# O

**OSTROM, ELINOR (1933–2012).** The first woman in the world to win the Nobel Prize for Economics (2009), Elinor Ostrom, and her husband, Vincent Ostrom, founded the Workshop in Political Theory and Policy Analysis (currently known as the Vincent and Elinor Ostrom Workshop) at Indiana University in 1973. With their colleagues, they researched the impact of institutional arrangements on resource management. By examining various cases around the world, they showed how common resources such as irrigation systems, forests, and fisheries can be managed successfully and sustainably by local communities operating on a basis of trust and cooperation. Ostrom's work on governing the commons is often used as a critique of Garret Hardin's "**Tragedy of the Commons.**" Ostrom also proposed the term *polycentrism* to mean a decentralized approach to dealing with major problems like climate change, seeing local communities as places of experimentation and innovation, which could learn from one another through networks and communication channels.

**OWEN, DAVID.** *See* ECOLOGY.

**OZONE LAYER.** *Ozone layer* is used to describe a concentration of ozone gas in the Earth's atmosphere, especially at a height of about 12 to 30 miles above the Earth's surface. Ozone in the atmosphere is vital to the survival of life as we know it because it creates a protective shield against nearly all of the ultraviolet radiation emanating from the sun. The principal danger from any depletion of the ozone layer is a startling rise in skin cancer. Other dangers from any increase in radiation passing through the atmosphere include damage to the immune system of humans and animals and threats to plant life, both on land and in the oceans. An increase in ultraviolet radiation is likely to contribute to chemical-smog and health problems, notably respiratory illnesses.

The principal cause of ozone layer depletion was the production, mainly in industrialized countries, of chlorofluorocarbons (CFCs). They had been used since the 1930s as an inexpensive and effective way to propel substances in

aerosol cans, such as deodorants, perfume, and paints. They were also used in a wide range of plastic foams for packing, in furniture, in the production of Styrofoam containers for fast-food outlets, and in a liquefied form, as a coolant in refrigerators and freezers. Production of the most commonly used CFCs, chlorofluorocarbon 11 and chlorofluorocarbon 12, rose from around 5,000 tons per annum in the 1930s to 45,000 tons in 1951, 750,000 tons in 1971, and over one million tons in the early 1990s.

As far back as 1974, two researchers at the University of California, F. Sherwood Rowland and Mario Molina, discovered that the release of large volumes of CFCs into the atmosphere would probably destroy a significant proportion of the ozone layer. Studies by the U.S. National Academy of Sciences in 1976 and 1979 supported these findings. The U.S. government did respond to this information by prohibiting, in 1978, the use of CFCs in nearly all aerosols. **Sweden, Canada, Norway, and Finland** took similar steps. These five countries, thereafter referred to as the *Toronto Group*, presented a variety of proposals for eliminating, across the world, the use of CFCs in aerosol cans and for phasing out their use in other products.

Initially, action by the Toronto Group had limited impact. First, its own ban on CFCs in aerosol cans did not lead to a reduction in the production of CFCs since they could be put to many other uses.

Second, the Toronto Group faced opposition, notably by countries in the European Union (EU), on the grounds that more evidence was needed to prove the connection between CFCs and depletion of the ozone layer. The EU also perceived a variety of threats to its economic interests.

Major scientific breakthroughs occurred in the late 1970s and early 1980s. In 1982, scientists engaged in the British Antarctic Survey announced a significant reduction in the concentration of ozone over the Antarctic. There remained, however, uncertainty over the reliability of this finding and whether CFCs, rather than other factors, were the cause of ozone depletion. The British scientists carried out exhaustive tests for two more years and, by the end of 1984, were convinced that there had been a 30 percent reduction, or thinning, of the ozone layer in this region.

The threat to the ozone layer provided a huge impetus to the development of the green movement in the 1980s, as governments and industrialists became involved in negotiations on how to handle the problem, and environmental groups such as **Friends of the Earth** launched highly successful campaigns all over the world to persuade consumers to boycott products that contained CFCs. Apart from bringing about considerable pressure on governments, public opinion and consumer boycotts led to swift changes in the practices of major corporations. In the **United Kingdom**, some of the leading corporations removed CFCs from aerosol cans. In a campaign led by Friends of the Earth in the United States and over 30 other countries, environmental groups targeted the use of CFCs in Styrofoam packaging. In 1987, McDo-

nalds, along with other fast-food outlets, agreed to eliminate packaging that was made with CFCs. However, the most significant steps in phasing out CFCs were to occur as scientists made further discoveries about their deleterious impact on the atmosphere and pressure mounted on governments to introduce drastic measures. This led to the **Vienna Convention for the Protection of the Ozone Layer** of 1985 and the **Montreal Protocol on Substances That Deplete the Ozone Layer** of 1987. Under these agreements, around 50 developed countries agreed to reduce their consumption of CFCs by 50 percent by the year 2000. Less developed countries, which contributed only marginally to the production and consumption of CFCs, were permitted to increase their consumption up to the end of the century; afterward, they were also expected to phase out their CFCs.

Within two weeks of the signing of the Montreal Protocol, on 30 September 1987, flights by the National Aeronautics and Space Administration over the Antarctic indicated that the problem of ozone depletion would need to be addressed in an even more radical manner. The scientists found that the “hole” in the ozone layer was roughly equivalent in size to the surface area of the United States and, in depth, to the height of Mount Everest. At certain levels and points, there was almost no ozone left at all. Above all, the scientists made a connection between huge volumes of chlorine monoxide, a byproduct of CFCs, and the depletion of ozone.

Scientists soon became convinced that there would have to be a 100 percent reduction in CFCs. They were also aware that even if this were implemented, it would not be until well into the following century that the level of chlorine in the stratosphere would return to the levels registered in 1985. In 1988 and 1989, scientists discovered large volumes of chlorine monoxide in the Northern Hemisphere, over the Arctic. Though they could not identify any significant depletion in the ozone layer, they predicted a similar outcome to the one that had occurred in the Southern Hemisphere. In 1989, the United States and countries belonging to the EU committed themselves to abandoning all production of CFCs by the year 2000.

The Montreal Protocol has been amended a number of times to include other ozone-depleting chemicals and to speed up the phase-out of harmful chemicals. One of the most important amendments was to extend the protocol to cover hydrochlorofluorocarbons, initially introduced as a substitute for CFCs but then deemed unacceptable as a result of their high global-warming potential. Under the amendment, developed countries are expected to reduce hydrochlorofluorocarbons by 90 percent of the baseline by 2015 and completely phase out their production and consumption by 2030. To assist developing countries in meeting the costs of transitioning away from ozone-depleting substances, the Montreal Protocol set up a financial and technical assistance mechanism. Developing countries also received longer time frames for meeting phase-outs.



# P

**PAKISTAN.** Pakistan has little history with environmental policies, and the minimal “Green Revolution” that occurred in the 1970s specifically dealt with land reform and self-sustainability amid the farming community. Similar to the situation faced by other developing nations, Pakistan was forced to recognize and deal with land overuse and misappropriation among the wealthy. Land reform took place in the 1970s, but like other environmental legislation, it was unsuccessful. Major environmental legislation included environmentally related portions of the 1973 Constitution, the 1983 Pakistan Environmental Protection Ordinance (PEPO), and the 1996 Environmental Protection Act. The Constitution, however, provides no concrete laws concerning the environment. PEPO created the Pakistan Environmental Protection Agency (EPA), yet it has remained weak.

In 2013, the government officially launched the National Climate Change Policy (NCCP) in reaction to rising global-climate concerns. With the goal “to ensure that **climate change** is mainstreamed in the economically and socially vulnerable sectors of the economy and to steer Pakistan towards climate-resilient development,” the NCCP was developed in consultation with the provinces, federal institutions, and civil society. The Prime Minister’s Committee on Climate Change (PMCCC) helps to monitor climate change–related developments and provide overall climate-policy suggestions. The NCCP committee, chaired by the minister of climate change, is expected to ensure effective implementation of policies and to monitor progress.

The Green Party of Pakistan, known as the “Pakistan Greens,” was founded in 2002 and is a member of the **Asia-Pacific Green Network** and the **Global Greens Network**. The Pakistan Greens are only now gaining a foothold in Pakistani politics and have yet to be elected to major offices.

Similar to the green parties of other Asian nations, the Pakistan Greens are courting the younger generation. The idea is that through the youth, the party can cultivate a belief in environmental responsibility. In 2005, at a meeting of the Asia-Pacific Greens Network, the Young Greens Workshop involved members of greens from various states, including Pakistan. Representatives

of the Pakistani Greens created the themes “organizing the young” and “move for change: next generation politics.” The party has goals similar to other green parties’, such as grassroots democracy, social justice and equal opportunity, ecological wisdom, nonviolence and peace, community-based economics and economic justice, gender equity, and respect for diversity. In its 2009 party statement, it emphasized stopping U.S. drone attacks inside Pakistani territory in order to avoid more civilian casualties. The party called for seeking peaceful resolution to the conflicts between countries. Liaquat Ali Shaikh, chairperson of Pakistan Green Party, was reelected as the convener of the Asia Pacific Greens Federation for a second term. Liaquat Shaikh has been kidnapped, attacked at gunpoint, and robbed to deter him from continuing in Green politics.

**PAPAL ENCYCLICAL, *LAUDATO SI*.** Pope Francis is the 266th pope of the Roman Catholic Church. Noted for his humility and concern for the poor, Pope Francis has publicly addressed the importance of environmental protection. He describes environmental concerns as a great contemporary challenge and states that development should respect what Christians see as creation, and that exploiting the earth is sinful. On 18 June 2015, in a papal encyclical letter (*Laudato Si*, which translates as “Praised Be,” a reference to a prayer from the pope’s namesake St. Francis, the patron saint of ecology), Pope Francis called on the world’s 1.2 billion Catholics to join the fight against **climate change**. In the letter, Pope Francis declared that the science of climate change is clear, and the Catholic Church views protection of the Earth as a moral obligation. “We need nature,” he said, expressing that the care of nature and the care of the poor are aspects of the same ethical commandment. Humans and nature are inextricably linked and part of each other. It is the relationship that must be set right. The letter is considered one of the most influential papal documents of the past 100 years.

In September 2015, Pope Francis also brought the message to the U.S. White House, calling for urgent action on climate change and invoking Martin Luther King Jr. in speaking of the moral need to protect our “common home.” At the 70th session of the United Nations General Assembly, Pope Francis pleaded with the world’s leaders to act now on climate change. “It must be stated that a true ‘right of the environment’ does exist,” the pope said, and “any harm done to the environment, therefore, is harm done to humanity.”

**THE PARIS AGREEMENT.** At the 21st Conference of the Parties (COP 21) to the **United Nations Framework Convention on Climate Change (UNFCCC)** in Paris in December 2015, 195 countries and the EU agreed upon a new global deal to tackle **climate change**. As of July 2018, 179



parties had ratified the agreement. The Paris Agreement marks the culmination of years of work to achieve a global agreement to address climate change. Although hopes had been high that an agreement could have been reached in 2009 in Copenhagen, differences in states' positions required additional years of negotiations. The Paris Agreement signals a growing global consensus on the need to transition away from structures where fossil fuels serve as the primary engine of economic growth to more efficient and cleaner energy systems. It also signals growing awareness that climate change is already having major global impacts. In contrast with the **Kyoto Protocol**, which only required mitigation activities from a group of wealthier states, the Paris Agreement calls for action by all countries in the form of nationally determined contributions. The agreement calls for keeping a global temperature rise this century to well below 2 degrees Celsius above preindustrial levels and to pursue efforts to limit the increase to 1.5 degrees Celsius as has been called for by small-island states and others facing risks from rising sea levels. Beyond mitigation, the agreement also seeks to enhance adaptation capacities and to provide stronger financial and technical assistance to developing countries to deal with climate change. At the 2018 Conference of the Parties to the UNFCCC held in Katowice, Poland, a rulebook for implementing the agreement was agreed upon. The Paris Agreement includes a five-year stock-taking process to allow for progress assessment and to keep the door open for reassessing the strength of commitments relative to new scientific information about global climate trends. The agreement aims at ensuring transparency, accountability, and verifiability. While aspects of the agreement, such as reporting requirements, are legally binding on states, setting emissions targets for individual countries is left to the individual countries to decide. The Donald Trump administration has announced its plans to withdraw the United States from the Paris Agreement. *See also* 2-DEGREE TARGET; ADAPTATION TO CLIMATE CHANGE; CLIMATE INDUCED HUMAN MIGRATION AND DISPLACEMENT; INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC).

**PASSIVE HOUSE.** *See* ZERO-ENERGY BUILDING.

**PEOPLE'S REPUBLIC OF CHINA (PRC).** *See* CHINA, PEOPLE'S REPUBLIC OF (PRC).

**PESTICIDE ACTION NETWORK (PAN).** With regional centers in Africa, Asia/Pacific, Europe, and Latin America, PAN is a network of over 600 nongovernmental organizations (NGOs) in 90 countries that campaign to eliminate hazardous pesticides.

**PLANETARY BOUNDARIES.** In their 2009 article “A Safe Operating Space for Humanity” (later featured as a summary in *Nature*), Johan Rockström and colleagues from Stockholm University identified and quantified nine earth system processes that have boundaries within which humanity can operate safely. The earth system processes are stratospheric ozone depletion, biodiversity loss and extinctions, chemical pollution, climate change, ocean acidification, freshwater consumption and the global hydrological cycle, land system change, nitrogen and phosphorus flows into the biosphere and oceans, and atmospheric aerosol loading. Going beyond these boundaries, they explain, could lead to irreversible changes to critical earth system processes with potentially catastrophic consequences. At the Planet under Pressure Conference, the 3,000 scientific attendees issued the “State of the Planet Declaration”; the concept of planetary boundaries was at its core. After an initial insertion of the concept into the zero draft of the 2012 United Nations Conference on Sustainable Development (**Rio+20**) outcome document, the concept had to be withdrawn due to a lack of agreement among the negotiators.

In 2012, Kate Raworth, an economist who worked at Oxfam, added a new concept to the planetary boundary called the “doughnut of social and planetary boundaries” that draws from her work on doughnut economics. She suggested that not only are there environmental conditions, but there are also twelve social dimensions that are needed to make the world a safe and just space for humanity: health, education, gender equality, political voice, housing, networks, energy, water, food, income and work, social equity, and peace and justice. The doughnut has the social dimensions on the inside ring and the planetary boundaries on the outside. *See also* CLIMATE CHANGE; OZONE LAYER; SUSTAINABLE DEVELOPMENT.

**PLASTIC POLLUTION.** The growth in the production and use of plastics has resulted in a global-waste crisis. Plastic straws, bottles, bags, wrappings, bottle caps, children’s toys, furniture, and clothes now fill not only landfills but also the world’s waterways. Pictures of dead birds and marine mammals with stomachs filled with plastic waste have shocked the world and helped create an anti-plastics movement. Scientists warn that the world’s oceans are filling with plastic waste, much of it microplastics that are too small to even see. By some estimates, there could be more plastic in the oceans by weight than fish by mid-century if a drastic transition from plastic use is not achieved. The plastic crisis has led to movements to ban the use of plastic bags and to end the use of single-use plastics. Plastic recycling efforts in many parts of the world were hit hard when China stopped importing much plastic waste. The Plastic Pollution Coalition is an alliance of individuals, organizations, businesses, and policy makers working to eliminate plastic use



**The Science Center in Los Angeles seeks to educate visitors about plastic consumption, waste, and pollution. Courtesy of Miranda Schreurs.**

and its impacts on humans and the environment. The coalition warns that pollution is also a social-justice issue as it is fence-line communities that are most adversely impacted by plastic pollution.

**POLAND.** Heavy industry and mining dominated Poland's economy in Soviet times, polluting the air and water. Poland's environmental problems are severe. In order to become a member of the European Union (EU), Poland was required to meet the demands of the *acquis communautaire's* environmental chapter. Due to serious pollution levels, Poland was given an extension on meeting the air pollution requirements.

The environmental movement in Poland from the 1950s to the 1970s was limited to groups that were considered nonthreatening by the state. They tended to focus on conservation issues. In 1980, with the rise of the Solidarity movement, more space opened up for environmental activism; in that

year, the Polish Ecological Club was founded. Most environmental movements at the time were just that—movements and not organizations. These movements were active in the 1989 protests against the communist government, and representatives were invited into roundtable negotiations between the opposition and the communist regime. Their involvement led to the formation of the subgroup on the environment, which was supposed to be a forum discussing the future direction of nature protection in Poland. Engaged experts prepared a set of twenty-seven recommendations, which laid foundations for Poland's National Environmental Policy; however, due to political instability, only four recommendations were adopted as official regulations and laws (increase in pollution fees, establishment of the State Environmental Inspection, introduction of the Forestry Act, and introduction of the Nature Protection Act).

After the fall of communism in Poland, new environmental groups emerged. They often mobilized to protect nature against development decisions made by authorities at different levels. In addition to the Polish Ecological Club, some of the main environmental NGOs are the Institute for Eco-development, the League of Environment's Protection, the National Foundation for Environmental Protection, and the Polish Green Network. Movements have risen against plans for building the country's first nuclear power plant, shale gas drilling, and hydraulic fracturing, as well as open-pit brown coal mines. Issues that in recent years have integrated environmental movements and activists in Poland include protection of the Rospuda River valley from a highway project and the fight against air pollution, for example with the initiative the Polish Smog Alarm. The Climate Coalition, an assembly of twenty-three NGOs, promotes actions on **climate change** mitigation and **adaptation**. Poland's environmental movement, however, remains weak and poorly funded.

While there were early efforts to establish a political wing to the green movement in the early 1990s, it did not occur until September 2003, when the Founding Congress of the Green Party (Zieloni) took place. The efforts to form a green party were spearheaded by the Ecological Forum of the Union for Freedom and various environmental groups. The party was officially registered in 2004, and hence its name "Zieloni 2004." It was created in part from disillusionment with aspects of the Polish transformation. During the 1990s, emphasis was placed on creating a free market society, and this led to the marginalization of environmental issues, treated as a "luxury" item of wealthy societies. The party fielded candidates in the 2004, 2009, and 2014 European parliamentary elections; the 2005, 2007, 2011, and 2015 national parliamentary elections; and the 2006, 2010, and 2014 local elections, but has not won sufficient votes to obtain any seats.

**POLITICAL ECOLOGY.** This is an academic field that delves into the human-environmental relationship, focusing on political institutions, political economy, and political actions. The term *political ecology* has been used widely since the 1970s when environmental problems gained public attention and became political issues. Political ecologists share the view that environmental change results from politics and political activities. Researchers in political ecology see a strong link between environmental degradation and political and economic marginalization. They call for environmental protection and justice and the heeding of local cultures and traditions.

**POLLUTER PAYS PRINCIPLE.** Environmentalists and economists have evoked the polluter pays principle to address the consequences of damage to the environment. In essence, it refers to the idea that the full costs of goods and services, including the cost of repairing any damage inflicted on the environment, should be taken into consideration. For many governments, this means trying to ensure that the price of products includes the entire social and environmental costs of their production. The Federal Republic of **Germany** recognized this principle in 1971. Following the Maastricht Treaty on European Union in 1991, this principle was meant to apply to all member states. According to the Maastricht Treaty, the producer should meet the cost of damage to the environment. Governments set the standards, and polluters pay the relevant costs.

**POLLUTION CHARGES.** In response to growing concern by expert communities and the public at large, governments either have begun to consider the possibility of, or have implemented taxes and charges on, products in order to reflect the costs to the environment of their production, use, or disposal. Green economists have long been concerned that the costs of goods and services have failed to reflect real costs in terms of damage to the environment and have therefore argued and presented various mechanisms for valuing the environment. *See also* CARBON PRICING; POLLUTER PAYS PRINCIPLE.

**POPULATION GROWTH.** The notion of population growth as a central problem in modern societies has been a controversial one within the green movement. It underlies arguments about the “**Tragedy of the Commons**” and *The Limits to Growth*. The theme of overpopulation was publicized through best-selling works by **Paul Ehrlich** and by activists in green parties such as Sandy Irvine and Alec Ponton, members of the British Green Party. In *A Green Manifesto*, Irvine and Ponton declared that the expansion in human population represented the greatest of all threats to the survival of the living world. There is also a strong parallel to the arguments of **Thomas**

**Malthus** in the 19th century. Irvine and Ponton outlined detailed measures, including financial disincentives to procreation and educational campaigns that led to changes in perceptions about this issue.

More recently, with statistics showing negative population growth throughout Europe as well as in **Japan** and the **Republic of Korea**, the environmental community in the north has stopped talking much about population growth, even though the global population, estimated to be about 9.7 billion in 2050 could reach 11 billion by 2100 according to a medium-range estimate of the United Nations Population Division.

The challenge of population growth has been confronted most forcefully and controversially by the **People's Republic of China**, where a one-child policy was introduced in 1986 after the population hit the one billion mark (compared with 550,000 in 1950). While exceptions were made for minority populations and enforcement was somewhat laxer in some rural communities, the controversial one-child policy helped to prevent an even more extreme population problem for the People's Republic of China. This was done through education campaigns, closely monitored birth control measures, and in some cases, the reporting in workplaces of women's menstrual cycles. Most controversial were forced abortions and female infanticide that the policy also resulted in. However, the government has been relaxing the policy as it becomes worried about the reverse-pyramid effect, a population that is top heavy with older people. At the end of 2015, the Chinese government introduced the two-child policy due to the country's shrinking population and aging workforce. Under the new law, married couples are allowed to have a second child, but limits on additional births remain.

Population control efforts have been less successful in **India** than in the People's Republic of China. A government-sponsored sterilization program in 1975 that relied on coercive tactics and took advantage of illiteracy in rural communities seriously backfired; people lost trust in the government, and this problematized future government birth control programs. Compared to a population of 368 million in 1950, in 2006, **India's** population stood at 1.1 billion, and in 2017, at 1.34 billion. Middle-range estimates are that it will be close to 1.7 billion in 2050. Africa's population is also expected to grow strongly in the next decades and could double to about 2.5 billion by 2050.

The 1994 Cairo Programme of Action of the United Nations Conference on Population and Development reflects the ambiguity of international attitudes toward population matters. The program's nine principles include, among other things, the right to development, the importance of eradicating poverty for **sustainable development**, the right to decide freely and fairly the spacing of children, and the family as the basic unit of society.

**PORRITT, JONATHON.** *See* UNITED KINGDOM.

**PORTUGAL.** Portugal's Partido Ecologista-Os Verdes (Ecologist Party "The Greens") was formed in 1982 out of a green citizens' movement that was eager to add green concerns to local and national politics in Portugal. The party has used a coalition strategy to gain recognition at the polls. In the 2005 election, it formed a coalition with the Communist Party, Partido Comunista Português (PCP), and formed the CDU-Coligação Democrática Unitária, the Unitary Democratic coalition. This coalition won 7.57 percent of the vote and was awarded two seats in Parliament, which it has maintained in subsequent elections (2009, 2011, and 2015). At the European Parliamentary level, it received 9.1 percent of the vote in the 2004 election, 10.6 percent in 2009, and 12.7 percent in 2014. The coalition, however, has had no representatives in the European Parliament as the seats went to its partners. After the 2019 European Parliament election, one representative from the O Partido das Pessoas, dos Animais e da Natureza (PAN) party, first registered in 2011, could join the Greens-European Free Alliance party grouping.

In reacting to **climate change** challenges, Portugal has implemented several related policies, including energy efficiency, effective liberalization of energy markets, and reduced dependence on fossil fuels through increasing use of biofuels and improved public transport. The climate policies that have been implemented include reducing primary energy consumption and increasing the use of **renewable energy** by 2020, implementing the **European Union Emissions Trading Scheme (EU-ETS)** for the phase of 2013–2020, and having 10 percent of the renewable energy consumption in transportation by 2020. The country also adopted the National Adaptation Climate Change Strategy (ENAAC) in 2012, with the aim to raise awareness about climate change, keep scientific knowledge updated and available, and strengthen measures in monitoring climate change impacts. Portugal has become a leader in Europe in the introduction of wind power.

**POSTMATERIALISM.** Many writers have used the concept of postmaterialism to explain the change in values that has precipitated the advance of the green movement. The contrast between material and postmaterial values is as old as the study of politics. Aristotle suggested that once people had satisfied their basic material needs, they might aspire to fulfill "higher" spiritual needs.

In empirical studies conducted since the 1970s, political scientist Ronald Inglehart interpreted public opinion data from several European nations to suggest that materialist and postmaterialist values were strongly associated with new conflicts in society. Although scholars interested in the rise of postmaterialist values were initially concerned about the protest movements of the 1960s (the student and civil rights movements) rather than the green movement, the connection has often been made between postmaterial values

and the ascent of the greens. Studies have repeatedly shown a strong connection between postmaterial values, as measured by Inglehart, and support for the green movement.

The term *postmaterialism* has been used to draw attention to a shift in value priorities from materialism to postmaterialism, from a prevalent way of thinking (oriented to economic growth) to an alternative environmentalist approach. Initially, Inglehart measured materialist and postmaterialist values by presenting survey respondents with a list of four goals for their country over the next 10 years and asking them to rank these goals in order of priority. The four items were “the maintenance of order in the nation,” “giving people more say in government decisions,” “fighting rising prices,” and “protecting freedom of speech.”

The second and fourth items were designed to find out who identified with the 1960s protests for more civil rights and liberty. Respondents who chose these two items as their first and second priorities were classified as postmaterialists. Those who chose “the maintenance of order” and “fighting rising prices” were deemed to be materialist. A third “mixed” category was used for those (namely, the majority) who were neither outright materialists nor postmaterialists. In the meantime, more items have been added to the list.

The scale identified the tendency of some to stress participation and individual freedom rather than economic and personal security. It has also been used to assess the connection between values and political behavior as well as economic and social circumstances. Like groups in the green movement, the 1960s social movements emphasized participation and freedom of speech in Western democracies. Numerous studies have shown that many of the backers of social movements in the 1960s also played a leading role in the green movement that began to attract many supporters in the 1970s. Inglehart’s analysis of the impact of these earlier movements has proved to be of lasting importance, despite some shortcomings in his approach.

Inglehart adopted the notion of a “hierarchy of needs” from the psychologist Abraham Maslow. At the base of this hierarchy, we find primary or basic needs for survival, such as food, shelter, and security. They are labeled “material needs.” Once these needs have been met, people are more likely to seek fulfillment of secondary needs, including intellectual, aesthetic, and social needs. In affluent societies, basic material needs for food and shelter are usually met, if not by individuals receiving income as wage earners, then at least by the welfare state, which is supposed to provide a basic safety net. People in affluent societies are therefore more likely than those in societies experiencing relatively high levels of material deprivation to be able to pursue intellectual, aesthetic, and social-postmaterialist goals.

During an economic recession, there is likely to be a diminishing emphasis on postmaterial values. Inglehart has postulated that this decline is not inevitable. The effect of poverty on values can be held in check by the socializa-



tion of individuals into certain values during particular phases of the life cycle. In other words, Inglehart has presented a parallel hypothesis based on the notion of socialization.

Although this and other arguments by Inglehart have been subject to many challenges, the distinction between materialism and postmaterialism has been influential in discussions about the rise of the green movement. Materialism is associated with economic growth; nonmaterialism, in contrast, is connected to self-fulfillment and self-actualization. The natural environment is valued either as a resource to be exploited for material ends or for its intrinsic or essential qualities. Though the notion of intrinsic qualities may appear somewhat nebulous, many argue that people are able to appreciate nature for aesthetic, spiritual, or even religious reasons. For many activists in the green movement, it is not so much a question of dominating but of living in harmony with nature.

Ingelhart's work led to the creation of the World Values Survey, which for decades has measured public opinion on a range of issues, including the environment, in a growing number of countries around the world. The project built on the European Values Survey. *See also* DEEP ECOLOGY; SPIRITUALITY.

**POWERING PAST COAL ALLIANCE.** The Powering Past Coal Alliance was established by **Canada** and the **United Kingdom** at the 23rd Conference of the Parties to the **UN Framework Convention on Climate Change** meeting in Paris in 2015. The alliance has since gained several new members (primarily at the subnational level: e.g., Australian Capital Territory, Hawaii, Minnesota, New York, Wales).

**PRECAUTIONARY PRINCIPLE.** The precautionary principle urges precautionary action in cases of scientific uncertainty related to the potential impacts of a product, activity, or intervention. The precautionary principle is the basis for the European Union's REACH program, which requires testing chemicals for potential harm to the environment or human health before their approval in production processes. In the case of climate change, it means taking action to reduce greenhouse gas emissions, as the preponderance of scientific evidence suggests climate change impacts could be harmful to humans and ecological systems. The precautionary burden shifts the burden of proof to the producer rather than the consumer. A producer must provide solid evidence of a chemical's safety before its release into the environment. A government must take action to protect its citizens in the face of the potential catastrophic consequences of non-action.

**PRESERVATIONISM.** In the nineteenth century, a movement emerged advocating the protection of natural areas for their intrinsic worth. Preservationists believed that areas of natural beauty should be set aside as places where humans could commune with nature and be inspired by nature's splendors. John Muir is a famous preservationist. Whereas **conservationism** urged the protection of nature for economic purposes or leisure use, preservationism urged its protection on something close to moral grounds. *See also* SPIRITUALITY.

**PRICE MECHANISM.** *See* CARBON PRICING; POLLUTER PAYS PRINCIPLE; POLLUTION CHARGES; VALUING THE ENVIRONMENT.

**PROBE INTERNATIONAL.** Based in **Canada**, the organization provides information about the environmental effects of such projects as the **Three Gorges Dam** in **China** and dams on the Mekong River, especially where such investment activity pertains to Canada's aid and trade abroad. It seeks to make accountable the relevant actors through disclosure of information and advocacy work.

**PROPERTY RIGHTS MOVEMENT.** Opposition to the establishment of new environmental regulations in the **United States** has grown, and new groups intent on protecting property rights or eliminating environmental restrictions altogether (the "wise use" movement) have proliferated since the 1980s. Using many of the same tactics that environmental groups have used, the property rights movement has worked to stop what they perceive as infringements on their constitutional rights. There are now numerous groups across the country that have as their goal defending property rights from what they see as environmental regulations that prevent them from using their property. The property rights movement worked during the 1990s to weaken the U.S. Endangered Species Act and was successful in restricting congressional funding for the enforcement of the act. The National Endangered Species Act Reform Coalition, representing 150 groups, including farmers, electric utilities, homebuilders, and others, has been campaigning to have the Endangered Species Act revised so that compensation will be provided to property owners when restrictions are placed upon them because of endangered species found on their land. The property rights movement was one of the voices opposed to U.S. involvement in the **Convention on Biological Diversity**.

# Q

**QUALITY OF LIFE.** The green movement's challenging of established beliefs about economic development has led to a much broader definition of the quality of life. The concept goes beyond the enduring concerns about security of employment, food, and shelter to place a strong focus on environmental protection and **preservationism** for aesthetic, spiritual, recreational, and cultural reasons.

Interest in the quality of life impinges on the symbiotic relationship between formal employment and the informal sector (the home, family, and other social networks). Questions are brought up about the location and character of employment (a job that offers the possibility of self-realization, safe work conditions, a setting that is relatively free of fear and harassment, a reduction of time spent commuting to work, and telecommuting), a more flexible approach to the working day (or night), how work relates to involvement with family and other commitments, and new arrangements for monitoring actual work performance. Pressure for reform in the workplace is occurring in parallel with changes in how we perceive family life, relationships between spouses, and the raising of children.

The broader definition of quality of life advocated by the green movement has often been adopted by traditional political parties that have become preoccupied not only with the economic welfare of those in formal paid employment and their dependents but also with the social, economic, and political concerns of minorities, immigrants, single parents, homosexuals, and women. Although some of these issues are not directly related to environmental protection, they reflect concerns about the quality of life introduced by environmentalists.

Concerns with economic survival (the so-called traditional economic issues of unemployment, prices, inflation, and taxation) continue to play a significant and fundamental role in politics. Issues such as the health system, education, and care for the aged are deemed important not purely for the sake of survival, but in the context of improvements in the quality of life. Environ-

mentalism, along with concerns about the quality of health care, employment, and education, reminds us of this shift in priorities as certain needs have been met for growing sections of the population.

The rise in environmentalism is linked to much more than the obvious signs of deterioration in the physical environment. It is associated with changes in the social structure, efforts to adapt to technological change, and rising levels of education. Critiques of the concept of Gross Domestic Product as the best indicator of progress favor instead indices that place greater weight on quality-of-life concerns. *See also* POSTMATERIALISM.

# R

**RAINFOREST ACTION NETWORK (RAN).** With offices in San Francisco, California, and Tokyo, **Japan**, RAN works with environmental and human rights groups in 60 countries. The organization was formed in 1985, and one of its first campaigns was against Burger King. After sales dropped sharply, Burger King agreed to stop importing rainforest beef. RAN has used savvy campaigns to pressure large corporations to end practices that have harmed the world's rainforests. It also encourages citizen action through direct action, letter-writing campaigns, boycotts, and **nonviolent** demonstrations.

**RAINFOREST INFORMATION CENTRE.** This is an Australian-based nongovernmental organization (NGO) working to protect rainforests and the indigenous people who depend upon them. The group was born out of the successful efforts in the early 1980s to protect the rainforests of New South Wales, **Australia**.

**REDD+.** Agriculture expansion, infrastructure development, and destructive logging have contributed to wide-scale global deforestation and forest degradation. Deforestation accounts for close to one-fifth of global greenhouse gas emissions (second only to the energy sector). Reducing Emissions from Deforestation and Forest Degradation (REDD) is dedicated to creating a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forest lands and to invest in low-carbon pathways to **sustainable development**. The *plus* in REDD+ indicates that the program now goes beyond deforestation and forest degradation to include the role of conservation and the sustainable management of forests and enhancement of forest carbon stocks.

**REGAN, TOM.** *See* ANIMAL RIGHTS.

**RENEWABLE ENERGY.** Renewable energy comes from natural sources, which are replenishable in human time scales. Major forms of renewable energy include biogas, biomass, wood burning, hydropower, geothermal energy, solar photovoltaic, solar thermal, onshore and offshore wind, tidal, and wave power.

Interest in renewable energies has been central to the platforms of green movements and parties, not only because of their concern about environmental damage from **nuclear energy** and pollution from fossil fuels but also because renewable energies are frequently more decentralized and can empower local peoples. The possibilities of transforming energy structures toward greater use of renewable energy sources were embraced early on by the green movement. Writers such as Amory Lovins, the author of *Soft Energy Paths*, called for linking alternative energies and “soft” (sustainable, benign,



The hydroelectric power facility in Walchensee near the Austrian-German border. *Courtesy of Miranda Schreurs.*



**Solar photovoltaics in Germany. Courtesy of Alois Plüster.**

flexible, and resilient) technologies to the creation of a less coercive and centralized social system. He argued that alternative energy sources could be used to solve economic and environmental problems arising within industrial societies, and that the possibility of a more participatory culture, which might be associated with the use of technologies that require less centralized control, could be explored.

In the meantime, renewable energy has become increasingly mainstreamed and viewed as an important means of addressing **climate change**. Many governments have set ambitious renewable-energy targets. There are a growing number of renewable-energy success stories. **Denmark** produced 44 percent of its electricity from wind, and **Germany** obtained more than 35 percent of its electricity from renewable sources in 2017. In 2014, the European Union set a target of achieving at least a 27 percent share of renewable energy consumption by 2030. The **People's Republic of China** introduced a renewable energy law in 2006, aiming to increase renewable energy capacity to 15 percent of primary energy by 2020 and 20 percent by 2030. Today, China is by far the world's largest consumer and producer of renewable electricity, leading globally in the production of hydropower, wind power, and solar power. **Uruguay** produced close to 95 percent of its electricity from renewable sources in 2015 and aims to be carbon neutral by 2030.





Photovoltaics on a farm in Germany. *Courtesy of Alois Plüster.*



Photovoltaics on a rural home in Germany. *Courtesy of Alois Plüster.*



**India**, too, has set major goals for the expansion of renewable energy, and especially solar power. This is being done with multiple aims, including the electrification of rural areas, reducing dependence on heavily polluting coal, and developing new industries. For the over one billion people in the world who still lack access to electricity, renewable energy also brings hope.

Combined, the growth in renewables is also leading to considerable technological development in related fields, including in battery storage, electric mobility, and smart systems. With its abundant hydropower sources, **Norway** has also become a world leader in the introduction of electric vehicles.

**Brazil** became an internationally acclaimed success story due to its promotion of ethanol, produced from sugarcane, as a viable fuel alternative to oil. The Brazilian Ethanol Program was launched in 1975 following the international oil crisis. While early on, it faced a number of challenges, including dependency on government subsidies and falling demand due to market uncertainty born of insufficient production levels, the program succeeded in creating a cost-effective and widely used gasoline alternative. The ethanol use mandate in Brazil was set at 27 percent in 2016; the government provides tax incentives for ethanol.

Biomass as a fuel has, however, also been highly controversial and has led some governments to shift away from plans to expand biomass production. The conversion of agricultural land and forests for the growth of energy crops has raised great concerns about impacts on biodiversity, food availability, and food prices. This is becoming a big concern due to deforestation of the Amazon.

Traditional biomass energy is still the dominant form of energy in many developing countries. Population, agricultural, and development pressures have made collecting biomass for cooking and heating in many developing countries a major challenge. Much of this burden falls on women, who may have to walk long distances to collect firewood to burn. Women and children are also the main victims of the health problems associated with indoor cooking using biomass. International-development organizations have focused attention on the introduction of new renewable technologies, such as solar cooking stoves and solar photovoltaics, to provide energy sources to rural communities while simultaneously addressing health and quality-of-life concerns. *See also* “A BLUEPRINT FOR SURVIVAL”; THE PARIS AGREEMENT.

**REPUBLIC OF KOREA.** *See* KOREA, REPUBLIC OF.

**RIO+20.** The 2012 United Nations Conference on Sustainable Development (also referred to as the “Rio+20” conference, as it was held 20 years after the 1992 Earth Summit in the same city) was the third international conference

on **sustainable development** and one of the most well-attended United Nations meetings ever held. The conference allowed the international community to renew its commitment to sustainable development. The official negotiations focused on the establishment of a green-economy framework in the context of sustainable development and poverty eradication and on the reform of the United Nations institutions for sustainable development and the governance of the environment. In particular, after the proposal to establish a worldwide environmental organization was quickly rejected in the preparatory negotiations of the conference, a coalition of 120 countries advocated for the upgrade of the **United Nations Environment Programme (UNEP)** into a UN specialized agency. However, the negotiators could not agree on this proposal, either. Delegates finally settled on a financial upgrade of UNEP, a universal membership in its governing council, the creation of a high-level political forum to replace the **Commission on Sustainable Development**, and the strengthening of existing institutions such as the Economic and Social Council, in Rio. In addition, the international community recognized the importance and utility of a set of sustainable-development goals to succeed the **Millennium Development Goals** in the nonbinding written outcome of the conference, *The Future We Want*. Delegates also called for the constitution of an open working group to initiate and drive this process. *See also* THE FUTURE WE WANT.

**ROMANIA.** Romania's transition to democracy and away from state socialism, and its accession to the European Union (EU), which has required adoption of the *acquis communautaire*, dominated the nation's attention for many years. The environment was not the public's primary concern during this transition. Yet, as the site of one of the more grave environmental disasters to hit central and Eastern Europe, the environmental movement has been galvanized into action, supported by environmental movements in Western Europe. The trigger was a major cyanide spill in Baia Mare from a gold-extraction operation. The spill polluted several central European rivers, including the Somes, the Tisza in **Hungary**, and the Danube, which eventually flows into the Black Sea. Several Romanian nongovernmental organizations (NGOs) mobilized against a Canadian-Romanian mining company that was planning a large gold mine project in the Carpathian Mountains, making use of cyanide. In 2013, tens of thousands of demonstrators gathered for three weeks of protests. The government withdrew its support for the project and in 2017 submitted the village of Rosia Montană and surrounding areas in the Apuseni Mountains for inclusion on UNESCO's World Heritage list. The company is in the process of suing the government over this decision.

As with many states under the Soviet sphere of influence, Romania's greenhouse gas emissions dropped substantially in 1990 as a result of the collapse of its Soviet-style economy. Romania signed the **United Nations**

**Framework Convention on Climate Change (UNFCCC)** in 1992 and became the first Annex I country to ratify it in 1994. Unlike in many other post-Soviet economies, Romanian greenhouse gas emissions have continued a relatively steady decline, falling by 54 percent between 1990 and 2016. Romania also joined the **European Union Emissions Trading System (EU ETS)** in 2007 when it joined the EU. The government launched the National Strategy for Sustainable Development 2030 on 10 December 2018.

A variety of nascent green parties exists in Romania. Reflecting the country's break with communism, and in contrast with some of its western European counterparts that oppose neoliberal economics, the Romanian Green Party (Verzii) supports the free market and the elimination of government intervention, except as it pertains to environmental protection. In 2004, it attracted 60,000 votes in the national election but still failed to win a seat in Parliament. The Romanian Ecologist Party, founded as an informal organization in 1978 and registered as a political party in December 1989 by Petre Metanie, has addressed issues such as chemical pollution in the ecological system. He has opposed the indiscriminate economic policy proposed by the Communist Party. The division between green-related parties often creates confusion for the green electorate in the country, hence the Romanian Green Party, Ecological Movement of Romania (Mișcarea Ecologistă din România), and Romanian Democratic Agrarian Party (Partidul Democrat Agrar din România) joined forces in 2012, seeking to win a seat in the Parliament.

**ROYAL NATIONAL PARK.** Formally dedicated in April 1879, the National Park (later renamed “Royal National Park”) was the first **national park** in **Australia** and the second in the world. It was formed by an initiative of a former premier, Sir John Robertson. The park comprised 18,000 acres on the southern shores of Port Hacking, about 13 miles from the city of Sydney. The construction of a railway link in 1886 facilitated access to the park, and there was a rapid rise in the number of visitors.

**RUSSIA.** In the early part of the 20th century, ecologists in Russia promoted the establishment of nature preserves (*zapovedniks*) for scientific study. A few such preserves were established during the early Bolshevik years, but **conservationism** eventually lost out to Stalinism and its emphasis on conquering nature and heavy industrialization. As was the case in the West, in the late 1960s, movements began to form to oppose pollution and development projects that threatened environmentally sensitive areas, including on Lake Baikal and along the Volga River.

After the 1986 **Chernobyl** nuclear accident, environmental activism spread throughout the Soviet Union. With the political opening provided by perestroika, environmental activism temporarily flourished, and environmental groups played a significant role in the collapse of the Soviet Union, especially in **Estonia**, **Latvia**, and Lithuania. They became a channel through which opposition voices could express their discontent with aspects of the socialist economy and communist political system.

The breakup of the Soviet Union left Russia as the largest former Eastern bloc state. Despite Russia's large population, its vast territory means that population density is relatively low. Nevertheless, the legacies of Stalinist-era industrialization left Russia scarred by severe pollution. Although Russia has democratized, strong authoritarian tendencies remain. This has affected Russia's green movement. President Vladimir Putin clamped down on environmental groups during the 1990s, arresting Alexander Nikitin and Grigory Pasko, who provided information to the international community about the Russian nuclear fleet's dumping of radioactive waste and the dangerous state of its Pacific nuclear submarine fleet.

Many NGOs in the post-Soviet era depended on international financial assistance, but new restrictions on international groups have made foreign support of such groups more difficult. The foreign-agents law in force since 2012 gave the state a legal mechanism to scrutinize NGOs receiving foreign funding. The law led to the shutdown of many nongovernmental organizations and led others to choose to move their activities outside of Russia. In 2018, the California-based environmental group, Pacific Environment, which works to protect Pacific Rim communities in the **United States**, Asia, and the Arctic, was blacklisted as a threat to "Russia's state security." Other groups to be targeted have been primarily U.S. democracy-promoting organizations, like the National Endowment for Democracy and groups promoted by George Soros and Mikhail Khodorkovsky. People found to be cooperating with blacklisted groups can be fined, imprisoned, and banned from entering the country.

Still, there are environmental groups operating in Russia, including Russian Social-Ecological Union/Friends of the Earth Russia, **Greenpeace** Russia, WWF Russia, Biodiversity Conservation Center, and the Institute for Natural Resources Management. There is also a Green Party in Russia. The party has its roots in the 1992 Constructive Ecological Party, which transformed in 2002 into the Russian Ecological Party "The Greens." The party is an initiator and member of the Eurasian Green Party Association (EPPO). The party sees itself as "a public association of supporters taking balanced and consistent actions aimed at the ecological development of the productive forces of a united and strong Russia through the careful and efficient use of the country's natural resources and the protection of nature, for the creation of conditions for a healthy and dignified life for the population." Global

Greens has two Russian affiliate parties: Russia Greens and Green Alliance. Alexander Zakondyrin, head of the Green Alliance, was chosen as a candidate for environmental organizations in the 2018 mayoral election.

The collapse of Soviet-era industries and subsequent economic problems pushed companies to cut costs and avoid implementing environmental regulations. The strength of the fossil fuel industry has problematized efforts to introduce ambitious energy-efficiency and renewable-energy projects. The first period of Putin's presidency was marked by a strong disregard for environmental issues, strengthened by the shutting down of the State Committee on the Environment and its subnational units.

There are many environmental problems Russia must tackle. Russia has imported radioactive waste, is faced with cleaning up pollution from obsolete production facilities, and is challenged by air pollution, especially in big cities. Little has been done to promote new waste-management philosophies, and wastewater treatment lags behind other industrialized countries, a problem the Ministry of Construction was grappling with in 2018. Protests associated with municipal waste management erupted in Moscow in 2018 after a local landfill was forced to close due to pollution and spillover concerns.

Illegal poaching is a problem, although the government has sought to address it by increasing penalties for wildlife-related crimes. High levels of illegal deforestation of wooded regions are another ecological concern. While carbon dioxide emissions dropped dramatically in the first years after the collapse of the Soviet Union, they are once again rising. Russia's renewable energy target of 4.5 percent by 2020 is also very small in comparison internationally. There is also a huge nuclear legacy to be combatted.

Russia has many barriers to overcome in order to achieve a more balanced understanding of environmental issues and their outcomes. There is considerable corruption in Russia, and this problematizes environmental enforcement. Still, on the positive side, Russia has continued to participate in international environmental-treaty making, and Russian scientists have contributed to the global understanding of **climate change** and other pressing environmental problems. *See also* SOCIO-ECOLOGICAL UNION.



# S

**SARO-WIWA, KENULE (1941–1995).** Born in **Nigeria**, Kenule (Ken) Saro-Wiwa was an author, television producer, and environmental activist. He founded the **Movement for the Survival of the Ogoni People (MOSOP)**, an organization developed to defend the environmental and human rights of the Ogoni people who live in the Niger Delta. It can be considered a grassroots community-based political movement. After Royal Dutch Shell struck oil in the Ogoni lands in 1958, it extracted billions of dollars worth of oil. Nigeria became the seventh largest producer in the Organization of Petroleum Exporting Countries (OPEC). Very little of the oil revenue flowed into the Ogoni lands, however, and the environmental situation deteriorated severely.

In January 1993, Saro-Wiwa organized 300,000 Ogoni to march peacefully to demand a share in oil revenues and some form of political autonomy. MOSOP began requesting environmental remediation and compensation for past damage from the oil companies. By 1993, the oil companies began pulling out of the Ogoni lands, but the Nigerian government increased enforcement of military rule. In May 1994, the Nigerian government of General Sani Abacha abducted and jailed Saro-Wiwa in connection with the murder of four Ogoni leaders. In October 1995, a military tribunal tried and convicted him in a trial that was considered rigged and was lambasted around the world. On 10 November 1995 Saro-Wiwa and eight of his Ogoni compatriots were hanged. International outrage and condemnation led to the immediate suspension of Nigeria from the Commonwealth of Nations. The Human Rights Violation Investigation Commission of Nigeria set up by President Olosegun Obasanjo in 1999 issued its final report in 2002. This was released to the public in 2005.

**SAVE MY FUTURE FOUNDATION (SAMFU).** The high-quality wood in West Africa's rainforest has attracted the interest of international logging companies. The rainforest has an extremely diverse ecological system and is the habitat of a quarter of Africa's mammals. **Biodiversity** has suffered as loggers create pockets of rainforest, splitting up species and causing inter-

breeding in populations. Liberia hosts about 44 percent of the rainforest that stretches across West Africa. Commercial loggers such as the Evergreen Trading Corporation have been granted access by the Liberian government to remove trees, even within **national parks**. To combat the deforestation, groups such as SAMFU have sprung up as both environmental and human rights advocates. SAMFU does research to determine the amount of logging occurring, motivates local people to become involved through political action and civil disobedience, and educates rural communities about the rights to land. By addressing the human suffering that has accompanied deforestation along with environmental concerns, SAMFU reaches a broader base of the population.

**SAVE OUR ENVIRONMENT.** A collaborative Internet advocacy network of some of the largest and most influential U.S.-based environmental advocacy groups, including American Rivers, the National **Audubon Society**, **Defenders of Wildlife**, **Earth Justice**, **Environmental Defense Fund**, Environmental America, **Friends of the Earth**, **Greenpeace**, **League of Conservation Voters Education Fund**, **National Parks Conservation Association**, **Natural Resources Defense Council (NRDC)**, **National Wildlife Federation**, the Ocean Conservancy, the Pew Charitable Trusts, Physicians for Social Responsibility, the **Sierra Club**, Union of Concerned Scientists, the **Wilderness Society**, and the **World Wide Fund for Nature (WWF)**, Save Our Environment works on diverse environmental issues. Save Our Environment provides information on state and federal bills and their effects on the environment and encourages citizen action through letter-writing campaigns, editorials, state ballot initiatives, and the like.

**SCHUMACHER, E. F. (1911–1977).** Born in **Germany**, where he was trained as an economist, E. F. Schumacher immigrated to the **United Kingdom** in 1937. After being interned during World War II, he worked in a number of public service agencies, and was employed for 20 years at the British National Coal Board. Schumacher is renowned as the author of the highly influential *Small Is Beautiful*. He was also the founder, in 1966, of the Intermediate Technology Development Group, which had as its principal focus the development of technologies that were appropriate to the needs of less developed countries.

**SHIVA, VANDANA (1952– ).** A leading Indian physicist and renowned environmental activist, Vandana Shiva was a supporter of the **Chipko Andolan** Movement in **India** in the 1970s. She was an outspoken activist against the Green Revolution of the 1970s and is a firm critic of genetically modified seeds, which she argues contribute to **biodiversity** loss and force farmers to



use nonrenewable seeds, thereby increasing poverty. In 1982 she formed the Research Foundation for Science, Technology, and Ecology (RFSTE) and in 2000 created Naydanya (nine seeds). The purpose of RFSTE and Naydanya is to educate people about **conservationism** and agricultural issues. Both are directed toward helping farmers pursue more ecofriendly farming. Shiva has received numerous awards, including the Right Livelihood Award, also known as the Alternative Nobel Prize, in 1993. She is the author of several books, including *Soil Not Oil* (2008), *Earth Democracy* (2005), and *Stolen Harvest* (2001).

**SIERRA CLUB.** Founded in May 1892 by John Muir and his associates, the Sierra Club aimed to protect and preserve the natural environment, notably the Sierra Nevada, and encourage people to appreciate the region. From its inception, the Sierra Club campaigned and lobbied the highest levels of government to protect nature.

Its first success was in checking proposals to reduce Yosemite National Park in size. In 1910, it contributed to the successful campaign to establish Glacier National Park. In collaboration with other organizations, it applied pressure for the formation of a National Park Service (which was achieved in 1916) and protection of redwood forests (in 1919). The Sierra Club contributed to or led campaigns for the expansion of Sequoia National Park (1926), Grand Canyon National Park (1975), and Redwood National Park (1978) and the creation of numerous parks and reserves: Admiralty Island (1932); Kings Canyon (1940); Point Reyes National Seashore, California (1962); Padre Island National Seashore, Texas (1962); Big Thicket Preserve, Texas (1974); Big Cypress Reserve, Florida (1974); and Hells Canyon Recreation Area (1975).

Over time the Sierra Club broadened its focus from supporting legislation that protected forests and wilderness, such as the 1964 Wilderness Act, which created a National Wilderness Preservation System, to lobbying for the passage of the National Environmental Protection Act, founding of the Environmental Protection Agency (EPA) (1970), and reinforcement of the Clean Air Act (1977, 1987, and 1990). Other major campaign successes include the protection of about 0.8 million acres of land managed by the Forest Service (Colorado Wilderness Act, 1993), reversal of a decision by the World Bank to loan US\$500 million to **Brazil** for the construction of 147 new dams in the **Amazon** region, enactment of legislation to designate 6.8 million acres of wilderness in 18 states (1984), the successful suit against plans to remove 1.5 million acres of land from the Bureau of Land Management inventory of wilderness areas, and the enactment of the Alaska National Interest Lands Conservation Act (1980), which assigned **national park**–refuge and wilderness-area status to 375 million acres. In recent years, the Sierra Club has expanded its influences in various areas. It established the

Environmental Justice Program to help vulnerable communities that bear a disproportionate burden of pollution and health issues (2000). It facilitated the EPA's adopting arsenic-protection rules to reduce the level of arsenic in drinking water (2001). The Sierra Club's Puerto Rico chapter was formed as the first Spanish-speaking chapter to gain protection for the island's Northeast Ecological Corridor, a nesting ground for the endangered sea turtle (2005). The Sierra Club also advocated for the Omnibus Public Land Management Act in the largest public-lands conservation effort in 20 years (2009). Since 2010, carbon-emission reduction has become one of the major goals of the organization; its Beyond Coal campaign helped retire 80 of the country's 500 dirty coal-fired power plants, and it also facilitated the adoption of the fuel-efficiency standards introduced during the Barack Obama Administration. In 2013, the Sierra Club joined a large-scale civil disobedience action against the Keystone XL tar sands pipeline.

The Sierra Club's success in these campaigns corresponds to a steady increase in its membership. In 1897, the club had 350 members. In the first half of the century, there was a steady rise to 7,000 in 1952 and 10,000 in 1956. In 1950, the club formed a chapter outside California for the first time. Between 1952 and 1969, under the proactive leadership of **David Brower** and in the context of a growing awareness of environmental problems (triggered by popular works such as *Silent Spring* and reaction to the economic development that followed the post-World War II reconstruction), club membership increased tenfold, to 70,000. This trend continued and corresponded to the upsurge of new environmental groups and political organizations. In 2018, the Sierra Club reported that it had three million members.

Although the Sierra Club has continued to concentrate its campaigns on the preservation of lands and ancient forests, it has broadened its agenda to include issues such as endangered species protection, **population growth**, free trade agreements and their impact on the environment, policies by international agencies such as the World Bank, energy policy (and its impact on **climate change** and the **greenhouse effect**), air and water pollution, and waste management and recycling.

Though independent of any political organization, the Sierra Club endorses politicians in congressional races and, at times, presidential races, as it did with its endorsement of Bill Clinton in 1992. In the 2006 U.S. congressional elections, the Sierra Club endorsed a large number of candidates, primarily Democrats, but also a handful of Republicans and Independents. The club also endorsed Barack Obama for president in 2008 and praised him for "his strong record of support for clean air, wetlands protections and clean energy." This is not necessarily inconsistent with its mission statement: "To explore, enjoy and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of

the natural and human environment; and to use all lawful means to carry out these objectives.” The Sierra Club has been highly critical of President Donald Trump.

***SILENT SPRING.*** It takes much more than a scientific discovery to bring about a shift in perceptions about environmental protection and create mass political support for it. Helpful in this regard was the recognition that certain types of economic growth and forms of industrial development could seriously threaten the quality of human life. *Silent Spring*, by **Rachel Carson**, provides a striking illustration of how such a discovery can be effectively disseminated. The publication of the book in 1962 has widely been credited with setting in motion the mass environmental movements in the latter half of the 20th century.

Although the book was a landmark scientific study, its impact is not solely attributable to its scientific character. Carson had for many years been disturbed by the impact of chemical pesticides such as dichlorodiphenyltrichloroethane (DDT) on wildlife, its habitat, and human life. In sharing her findings with others, she went much further than presenting scientific evidence. She challenged the entire approach of the chemical and other industries, their “arrogance” in assuming that “nature exists for the convenience of man,” and their failure to appreciate that “the history of life on earth has been a history of interaction between living things and their surroundings.”

The book elicited an immediate response from the chemical industry. It spent hundreds of thousands of dollars to prevent the widespread dissemination of the work and in trying to discredit it. However, early sales of hardback copies alone amounted to 500,000, and in 1963, it was published in 15 countries. Throughout the **United States**, people were concerned that the use of DDT would lead to the extinction of treasured symbols such as the bald eagle. Publicity surrounding the book led to the establishment of a special panel of the Science Advisory Committee by President John F. Kennedy, which supported the arguments presented by Carson about the hazards of pesticides.

The impact of the book went far beyond the chemical industry and the government. *Silent Spring* provided a major impetus to the environmental movement, serving for many as a manifesto for questioning the prevailing approaches to progress and the quality of life. There had already been warnings about the dangers of DDT to the environment. One important difference between prior accounts and *Silent Spring* lay in Carson’s ability to place scientific discoveries in the context of a fundamental questioning of how people thought about the environment. The timing of the work may also have been an important factor; there was a more receptive audience in the 1960s than in the past. *See also* QUALITY OF LIFE.

**SILVA, MARINA (1958–)**. Marina Silva was born in a poor Brazilian rubber tapper family in the **Amazon** region. After she graduated from a university, Marina Silva became an environmental activist and worked with **Chico Mendes**, fighting against deforestation, before she was elected as the youngest female senator in 1994. Her work was recognized internationally, and she received the Goldman Environmental Prize in 1996. Working as the environmental minister between 2003 and 2008, she succeeded in developing policies that would reduce deforestation rates in the Amazon. Although she resigned over the government's forest policy in the end, she became popular among educated and young people.

She stood as the candidate of the Partido Verde (Green Party) in the 2010 presidential election and received 19.4 percent of the votes, putting her in third place in the election. After the election, she launched a new party focused on the environment and sustainability called Rede Sustentabilidade (Sustainability Network) in 2013. However, the new party failed to register as an official party as it was unable to gain a sufficient number of signatures before the 2014 presidential election. Therefore, in the election, she first ran as the running mate of Eduardo Campos, who was the candidate for the Brazilian Socialist party. When Campos was killed in an airplane accident, Marina Silva took over his candidacy. She did very well in the campaign, but the results put her in third place at the end.

**SLOVAKIA.** The Slovak Green Party's manifesto, which was drawn up in 1998 and revised in 2002, is based on the goals of **Agenda 21**. The party was established right after the Velvet Revolution in **Czechoslovakia**. The party first participated in elections in 1990, winning a higher percentage of the vote (3.5 percent) to the Narodna Rada (Parliament) than it has at any time since (1991: 1.1 percent; 2002: 1.0 percent; 2016: 0.67 percent). In 1990, it had six parliamentary representatives. The party had candidates in the elections in 2006, 2010, 2012, and 2016 but did not win any seats. This is a big contrast to the Green Party's situation in the neighboring **Czech Republic**. The party has done better at the local than the national level. Environmental movements played a crucial role in the collapse of the state socialist regime. Their leadership played a decisive role in the revolution of 1989. Yet environmental groups have struggled during the hard economic times that followed. Groups that seek to make a difference include Friends of the Earth Slovakia/Slovakia Priatel'ia Zeme, an association created by Friends of the Earth (CEPA), WOLF Forest Protection Movement, and Friends of the Earth SZP. The group deals with diverse subsidies; corporate regulations; privatization of public services; international financial institutions; EU funds; sustainable alternatives in regional development, transport, energy, forestry, and waste sectors; and biodiversity. The Active Citizens Fund, a fund supported by

Iceland, Liechtenstein, and **Norway**, has provided millions of euros to increase citizen participation in civic activities, including in the areas of environment, **climate change**, and sustainability.

**SLOW FOOD MOVEMENT.** Slow Food is a grassroots organization that seeks to preserve local food from fast-food expansion, and the effects of multinational food corporations on societies. Originally founded in **Italy** in 1989 by Carlo Petrini, the slow food movement exists now in over 160 countries. Slow food promotes access to “good, clean and fair food,” that is, good-quality and healthy food, clean production that does not harm the environment, fair prices for consumers, and fair conditions and pay for producers. According to the movement’s ideology, what and how people eat have impacts on various issues, from politics to environmental problems. Importantly, slow food is not necessarily organic, although it can be.

The slow food movement emerged from environmental and social justice movements. It is different from traditional environmental movements in that it aims to achieve social change in a more individualistic way than as a collective challenging of the state or social structures. Unlike other environmental movements, it focuses on food rather than an entire “green” lifestyle. Nevertheless, the movement aims to indirectly affect globalization pressures on (local) communities.

The slow food movement has impacts beyond food itself, mainly in initiating the “slow movement” and its many versions of anti-globalization and anti-hyper-capitalist lifestyles across the globe. Such impacts can be found in the “slow cities” initiatives that have adopted the movement’s core view of how sociopolitical systems should work.

**SMALL IS BEAUTIFUL.** The widespread use of the expression “small is beautiful” originated in the best-selling book of that title by British economist **E. F. Schumacher**. Schumacher argued less against all large-scale endeavors than about their suitability. He was concerned about the tendency to assume that immensity corresponds to efficient and effective structures. He provided many illustrations of how small-scale structures may often be much more effective in achieving objectives such as prosperity and environmental protection than large-scale ones. Schumacher, rather than advocating an “idolatry of smallness,” argues that we have simply gone too far, both in our beliefs and practices, in the opposite direction. His book also targets the values that arise from a preoccupation with materialism, and he links his thesis to debates about the plundering of the environment, thereby evoking some of the issues suggested in discussions of *The Limits to Growth*. See also POSTMATERIALISM.

**SOCIAL ECOLOGY.** The term *ecology* has been adapted in a variety of ways to characterize different modes of organizing or thinking about the green movement. Social ecology represents, in certain respects, a contrast to **deep ecology**. Whereas deep ecology is concerned with the exploitation of the environment, social ecology, as understood by anarchist-writer Murray Bookchin, represents the view that human beings' endeavor to dominate nature has its origins in their attempt to dominate one another. Bookchin differentiated social ecology from efforts to deal with environmental concerns by adopting new technologies (such as solar or wind power). He used social ecology to promote new social structures that include dismantling the power of centralized bureaucracies and hierarchies and focusing instead on the practice of **direct democracy**. There are strong parallels between arguments for social ecology and those proposed by fundamentalists in the green movement.

**SOCIALIST REPUBLIC OF VIETNAM.** *See* VIETNAM, SOCIALIST REPUBLIC OF.

**SOCIALIZATION.** The term *socialization* was used in arguments by the political scientist Ronald Inglehart about a shift from material to postmaterial values. Inglehart's central argument is that postmaterialists are more likely than materialists to take economic security for granted and to place more emphasis on aesthetic and intellectual development than on the pursuit of material goals. These postmaterialist values are said to underpin the rise of the green movement. Socialization is based on the understanding that the nature of people's upbringing, or socialization, prior to adulthood will have a lasting impact and be relatively independent of changes in economic fortunes and political upheavals. Inglehart has postulated two hypotheses: the scarcity hypothesis and the socialization hypothesis. The first is based on the assumption that people in affluent societies are more likely than those in societies experiencing relatively high levels of material deprivation to be able to pursue intellectual, aesthetic, and social goals—postmaterialist goals. The second is that the decline in these values is not inevitable during an economic recession. The effect of poverty on values can be held in check by the socialization of individuals into certain values during particular phases of the life cycle.

People who are socialized in different historical eras, which may be characterized either by affluence or deprivation, will later in life react differently to the economic, social, and political environment. Studies of political behavior have shown, for example, that many people have continued to identify with the same political party from their youngest years to old age. Several studies have shown significant differences in value priorities between people

who grew up during the Great Depression and those who were raised during the affluent postwar years. Those who experienced the Great Depression were more likely to have materialist values, even following improvements in socioeconomic conditions and radical changes in the political system.

One difficulty with the argument about the rise of **postmaterialism** has been Inglehart's apparent failure to specify the precise relationship between socialization and scarcity of material goods (which is said to be pivotal in influencing whether or not someone develops postmaterialist values). There is an apparent contradiction between the two notions; at the very least, they cannot be applied at the same time since socialization implies that values are constant or stable, whereas scarcity is based on the idea of a change in values under certain social and economic circumstances. Inglehart may have been too selective in applying these notions, overemphasizing socialization in relation to adult values and applying the scarcity argument to the formative years of a person's life. He may have failed to apply scarcity to adulthood and thereby neglected the analysis of change within a particular generation as a consequence of social and economic transformations.

**SOCIETY FOR THE PRESERVATION OF WILD FAUNA OF THE EMPIRE.** Founded in 1903, the Society for the Preservation of Wild Fauna of the Empire (later renamed the "Flora and Fauna Preservation Society" and renamed again "Fauna and Flora International") was the first international environmental association in Africa. The society initially focused on protecting fauna in colonized territories. It was backed both by naturalists and hunters who regretted the consequences of their past practices. The association was the first of many endeavors to achieve cooperation in protecting wildlife in Africa. *See also* AFRICAN SPECIAL PROJECT; AFRICAN WILDLIFE.

**SOCIO-ECOLOGICAL UNION.** This international environmental organization was born in the Soviet Union. Its roots are in the Druzhina (People's Patrol) Movement for Environmental Protection, the only large-membership ecological movement that existed in the Soviet Union. In 1987, it had more than 100 student associations participating. When the Socio-Ecological Union was founded in 1988, it brought together people from 89 cities and 11 republics of the Soviet Union. The Socio-Ecological Union has since grown into an umbrella organization of 250 independent nongovernmental organizations (NGOs) in Azerbaijan, Armenia, Belarus, **Estonia**, **Georgia**, Kazakhstan, Kyrgyzstan, Moldova, **Russia**, Tajikistan, Turkmenistan, **Ukraine**, Uzbekistan, and the **United States**. The organization campaigns against environmentally destructive projects, promotes environmental impact assessment, conducts environmental education, and works on issues related to **al-**

**ternative energy, biodiversity, conservationism,** sustainable forestry, **ozone and climate change,** air and water pollution, and chemical and nuclear safety. In recent years, the Socio-Ecological Union has launched various campaigns against the unjust behaviors of governments in arresting and punishing environmental activists including Eugene Vitishko, Andrei Zatoka, and Farid Tukhbatullin. Additionally, it is putting efforts into saving seal pups in northwest Russia and protesting against oil drilling near Sakhalin Island by Shell and ExxonMobil.

**SOUTH AFRICA.** Environmentalism had already begun in South Africa's dark, apartheid years. Whites in South Africa did not organize any waste removal or water purifying for black neighborhoods. Out of necessity, blacks created their own environmental cleanup group, the National Environmental Awareness Campaign, in 1978. The founder, Japhta Lekgheto, was one of the first local leaders to link apartheid to poor environmental conditions. The Cape Town Ecology Group, founded in 1987, but no longer active, cohosted South Africa's first conference on the environment, where the links between environmental degradation and politics were a main theme. For most blacks, however, obtaining basic rights and freedoms was the primary concern.

Post-apartheid South Africa's relative stability has created space for an environmental movement to emerge. Many international conservation groups are active in South Africa. Local ones have emerged as well. The **Environmental Justice** Networking Forum, a national network of civil-society groups, has as its primary focus the eradication of environmental injustices and promotion of **sustainable development.** The Bateleurs, an organization of pilots based in Johannesburg, for example, completes air missions for environmental causes. They take aerial photographs of mines, forests, or other places where access is difficult. Individuals and organizations with concern for the environment may request a mission in order to increase information, expose illegal activities, provide inspiring photographs of a protected area, track wildlife, or help nature reserves. The founder of the Bateleurs, Nora Kreher, won the Audi Terra Nova Award for Conservation and Preservation of Environment for 2005. South African citizens began another group, Food and Trees for Africa, in 1990. They have planted trees and sustainable gardens through their programs EduPlant, the Urban Greening Project, and Trees for Homes. In May 2005, a group of 20 organizations launched the Sustainability Watch Campaign to promote environmental monitoring and to raise awareness.

South Africa has a nascent green party that is a member of **Global Greens.** It addresses the country's numerous pollution and environmental-degradation issues and challenging health conditions. Also known as the "Government by the People Green Party," the Green Party of South Africa was founded in 1999. Two earlier efforts to form green-oriented parties (the



Ecology Party in 1989 and the Green Party in 1992) failed, and the parties disbanded. However, the future of the Green Party of South Africa remains uncertain. Its influence is limited in South Africa in general, and only accounted for 0.21 percent in the Western Cape provincial election in 2004. The party did not field candidates again until the 2019 provincial election but won only 0.13 percent of the vote. Another green party, (eThekweni) ECOPEACE, won the only Green seat in the eThekweni municipal election in 2000. ECOPEACE was founded in 1995 in Durban (“eThekweni” in Zulu); it is dedicated to environmental sustainability in areas including land, economics, and energy policy. ECOPEACE is a member in the Socialist Green Coalition, which is South Africa’s community-based social- and environmental-justice electoral front.

These political green parties face numerous obstacles that have so far prevented the formation of a strong and unified alliance or organization. The green movement in South Africa remains plural and diverse, but lacks a strong center and unified framework.

**SOVIET UNION.** *See* RUSSIA.

**SPACESHIP EARTH.** Our planet has often been compared to a spaceship to emphasize how reliant we are on our natural surroundings and that we should be aware of the consequences of disregarding resources necessary for survival such as air and water. Adlai Stevenson, a U.S. ambassador to the United Nations, used the term *Spaceship Earth* in July 1965 in a famous address. The idea was given an environmental twist in 1966 in an essay, “The Economics of the Coming Spaceship Earth,” by Kenneth Boulding, an economist from the University of Michigan. Boulding drew a sharp contrast between a “cowboy” economy based on production, consumption, and the careless exploitation of natural resources and a “spaceman” economy, which attached value to maintaining the quality and complexity of the total capital stock.

**SPAIN.** Along with **Greece** and **Portugal**, **Spain** is often considered to be less environmentally progressive than its northern neighbors. This image may be becoming outdated, however, as Spain becomes one of the world’s largest consumers of **renewable energy**, including solar and wind power. Iniciativa per Catalunya Verds (Initiative for Catalonia Greens) was in a coalition government in Catalonia from 2004 to 2010, and the Spanish greens (Los Verdes) joined the green group in the **European Parliament** for the first time in 2004.

Los Verdes struggled to gain a foothold in Spanish politics, which for many years has been dominated by conservative governments. It suffered from the competition stemming from other leftist parties, and particularly the communists, who have themselves taken on green issues. In 1984, it became the “Confederacion de los Verdes” (Confederation of the Greens). After the 2004 elections, one member of parliament (MP) and one senator represented them. The European Green Party, however, ended the membership of the Confederacion de los Verdes in its party, citing problems with internal democracy and arguing that the federation had become an empty shell. The European Greens instead gave their support to EQUO, which brings together 35 green parties and independent citizens to build a national Spanish green party.

In 2011, environmentalists and progressive politicians founded EQUO, with policies toward a society based on environmental sustainability, social equality, and active participation. Regional green parties in Spain support the party. EQUO describes itself as “La Alternativa Verde” (the alternative Green). In the 2014 European election, EQUO joined the European Spring (Primavera Europea) coalition, which focuses on policies including anti-corruption and fraud, decreasing the unemployment rate, and providing solutions for fiscal problems. In the 2015 general elections, EQUO joined Podemos, a newly formed party, and earned three seats. In the following general elections, held in 2016, EQUO joined Unidos Podemos, the electoral alliance with Podemos and United Left and earned three seats, as in 2015. From October 2016 to 2019, EQUO had one MEP in the European Parliament as the result of the European Spring coalition.

Representing Catalonia, the Iniciativa per Catalunya Verds formed in 1987 as a federation of three parties: the Unified Socialist Party of Catalonia, the Communist Party, and the left-wing Nationalists Agreement. It became a formal party in 1990. The party’s origins shaped its platform, which focuses on communism, **ecology**, and republicanism (red, green, violet). The party also describes itself as being opposed to hierarchy, favoritism, and corruption. It calls for a revitalization of left-leaning politics, greater free time for citizens, the return of a focus on community, gender equality, and close working relationships with nongovernmental organizations (NGOs), trade unions, and student groups.

Catalonian politics have been upended by the Spanish government’s harsh suppression of the Catalan independence movement after the referendum in favor of separation from Spain. Iniciativa per Catalunya Verds was dissolved in 2019. For the 2019 European Parliament elections, a new party, Green Coalition–Citizen Europe, formed but did not do well (0.29 percent). Similarly, the coalition Zero Cuts–The Greens–European Green (Recortes Cero–Los Verdes–Grupo Verde Europeo) received only 0.22 percent of the vote. Nevertheless, the Greens–European Free Alliance bloc in the European

Parliament (2019–2024) includes three parliamentarians from Spain: Oriol Junqueras i Vies, the former vice president of Catalonia who is imprisoned, was put on trial in 2019 for his involvement in the Catalan independence movement, and stripped of his parliament seat by the Spanish high court; Diana Riba i Giner of the party Esquerra Republicana de Catalunya; and Ernest Urtsun of the party Catalunya en Comú. The Greens–European Free Alliance has harshly criticized the Spanish government’s treatment of the Catalan independence movement leaders, calling them political prisoners.

**SPIRITUALITY.** *Spirituality* has been promoted by some sections of the green movement to refer to the spiritual qualities of nature. In the 19th century, the spiritual qualities of nature were highlighted by pioneers of the movement for **preservation** of wilderness areas, such as **John Muir**. Interest in the spiritual qualities of nature can be linked to a shift in values from materialism to **postmaterialism** and the notion of **deep ecology**. There is a parallel between the regard for the spiritual features of nature and holistic approaches to nature, the latter arguing that the whole is more than the sum of the parts. In *Breaking Through*, Walter and Dorothy Schwarz drew a distinction between industrial society, in which life is fragmented and materialistic, and an approach to life that is far more complete because it includes spirituality.

Spirituality is said to include the aesthetic, caring, and loving aspects of existence. The fact that it cannot be measured and categorized the way one can classify and gauge levels of pollution, votes for a green party, or the implementation of a waste-management policy has meant that it has not generally been overtly used in promoting the green movement. **Rudolf Bahro** addressed spirituality in *Building the Green Movement* See also CONSERVATIONISM; PRESERVATIONISM.

**STEADY-STATE ECONOMY.** The term *steady-state economy* was used by American economist Herman Daly to outline a possibility for dealing with some of the problems identified in 1970s debates about *The Limits to Growth*. The argument for a steady-state economy is a plea for either a sustainable economy or **sustainable development**. There are two main aspects to Daly’s argument for a sustainable economy. The predominant suggestion is that the laws of thermodynamics ultimately govern our economy. The other aspect is a principle-centered approach to human existence, derived from certain “moral first principles.” The first law of thermodynamics is that in a closed system, no energy is produced or consumed, only modified. The second law declares that heat may not of itself pass from a cooler to a

hotter substance. Daly refers to this as the *law of entropy*, which entails the gradual decrease in the amount of usable energy as a result of the process of matter modification.

The only addition to the power supply comes from solar energy. However, in our society, the rate of modification of existing matter surpasses the rate of replacement by solar energy. Daly concludes that we are the only species living beyond our “solar budget” and are moving toward the irreparable destruction of the biosphere. To deal with these problems, Daly advocates a steady-state economy, which would be based on a specified size of population and wealth. There would be flexibility for changing these sizes according to the availability of technologies and changes in values. However, a pivotal concept underlying any specification in size of population and wealth would be the “throughput of resources.” Throughput, he emphasizes, “begins with depletion (followed by production and consumption) and ends with an equal amount of waste effluent or pollution.”

The specification of throughput of resources implies that human beings, through moral principles and technology, would determine the rate of economic growth to a much greater extent than a system in which the growth of population and capital tends to shape technological and moral development. Daly stresses the importance of ethical first principles such as knowledge, self-discipline, and restraint on the accumulation of desires. He joins other critics of modern industrial society in questioning preoccupation with the power of scientific knowledge and necessity for economic growth. Instead, he proposes a greater emphasis on sharing scarce resources and controlling population growth. Other first principles promoted by Daly include the notion of holism. Whatever the objections to his ideas, Daly has brought about a notable shift in perceptions about the limits to and possibilities for reshaping the economy and linking it to concern about the environment. *See also* DEGROWTH; POPULATION GROWTH; SPIRITUALITY; STEWARDSHIP.

**STERN REVIEW.** Nicholas Stern’s 2006 *Review on the Economics of Climate Change* galvanized a global debate. The main message of the report was that climate change is the greatest indication of a market failure. Despite the high costs of mitigating global warming, they would be far lower than the costs of inaction. If climate change is not abated, the costs in terms of damages from storms, sea level rise, human displacement, and related lost productivity could reach between 5 and 20 percent of GDP on an annual basis. Although the methods Stern used to draw specific figures for the costs and benefits related to climate change action could be debated, the *Stern Report* contributed to raising awareness of the potentially huge economic ramifications of unabated climate change.

**STEWARDSHIP.** The notion of the stewardship of nature is derived from Judeo-Christian tradition. Although this tradition has often been linked to the secular belief in progress, it includes not only the notion of human dominion over nature but also of responsibility for it. A similar custodial view toward nature can be found in aboriginal cultures. Philosophers such as Robin Attfield, author of *The Ethics of Environmental Concern*, have drawn attention to examples in the teachings of the Eastern Church of a compassionate view toward animals, justified in terms of the common origins of humans and animals as “creatures of God.” The best-known Western examples of this compassionate view can be found in the work of St. Francis of Assisi. Recognition of moral obligations to nature and future generations is present in the Christian tradition.

Stewardship has been adopted by both new political movements and established organizations. Despite the diversity of green parties and their focus on local concerns, some agreement on basic principles such as stewardship and the needs of future generations has emerged. In his influential work on a **steady-state economy**, American economist Herman Daly evokes as his first principles the notions of holism and stewardship as counters to the preoccupation with the power of scientific knowledge and necessity for economic growth. At the national-government level, there was an acknowledgment in the 1990s of the notion of stewardship—for instance, in documents like “This Common Inheritance,” a white paper prepared by the British government. The **papal encyclical** on the environment, *Laudato Si*, also draws on concepts of stewardship.

**STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS (POPs).** This convention was adopted in 2001 and entered into force in May 2004. The purpose of the convention was to prevent the production, use, and export and import of designated persistent organic pollutants. Persistent organic pollutants are chemicals that remain in the environment for long periods of time; spread over wide geographical areas through the air, water, or migratory species; fail to degenerate; accumulate in the fatty tissues of living organisms; and are toxic to humans and wildlife. The convention has been amended several times to cover additional pollutants. As of 2018, there were 182 parties to the convention.

**STRANA ZELENYCH.** *See* CZECH REPUBLIC.

**STUDENT ENVIRONMENTAL ACTION COALITION (SEAC).** Started in 1988 in the United States, SEAC has hundreds of high schools, colleges, universities, and community groups as members. SEAC aims to educate and empower students and youth to fight for environmental and

social justice in schools and communities. The organization provides activist training for youths, information on various campaigns, and a forum for organizing campaigns and advocacy actions.

**SUNFLOWER.** This golden flower has become the symbol of many green parties as well as of a world free of nuclear weapons.

**SUSTAINABLE DEVELOPMENT.** This term has been used by international agencies ever since the 1972 **United Nations Conference on the Human Environment (UNCHE)**, held in Stockholm. It became an integral part of the vocabulary of public policy in Western democracies by the end of the 1980s. Prior to that, national governments had considered the development of national strategies for conservation, with the aim of integrating conservation and development. Sustainable development seeks to provide an alternative to favoring development over environmental protection by linking the two concepts.

Sustainable development was defined by the **World Commission on Environment and Development (WCED)**, formed in 1983 by the United Nations, as meeting “the needs of the present without compromising the ability of future generations to meet their own needs.” The commission provided a comprehensive statement on how to address both environmental and economic concerns and to recommend that all organizations strive to incorporate ecological wisdom into their economic and social decisions. The commission attempted to demonstrate that emphasis on materialism and economic growth will not necessarily damage the environment if it is guided by principles of **ecology** and preoccupied with the renewability of resources. Economic growth was, however, “absolutely essential in order to relieve the great poverty that is deepening in much of the developing world.”

In their attempts to influence the agenda for change that was being shaped by an increasingly powerful green movement, governments have exploited sustainable development much more fully than in the past. They have begun to formulate long-term plans for the integration and interdependence of conservation and development, retention of options for the future use of resources, and a focus on the underlying causes as well as the symptoms of environmental damage. Interest in these principles was rekindled by the reformulation of sustainable development by WCED and by growing awareness of environmental problems such as **climate change** and the depletion of the **ozone layer**.

Concern about these kinds of issues (especially among advanced industrialized nations) and the enduring questions about social justice and economic development that are repeatedly raised in discussions about the future direction of less developed countries have prompted intense efforts to define a

new agenda based on the concept of sustainable development. There has consequently been an increase in awareness of the possibilities for promoting development without harming the environment or maintaining a balance between development and the environment.

The idea of sustainable development has been used to forge close links between economic and environmental concerns by governments, business organizations, and environmental groups. For some critics, however, sustainable development is a new form of managerialism, an attempt to quantify, according to economic criteria, the costs and benefits of environmental damage. This is seen in some quarters as a retrograde step. Others regard the debate over sustainable development as creating the possibility for resolving the tension between environmental protection and economic development. They argue that we need to pursue development within a framework that recognizes the basis of prosperity, both now and for future generations, as the proper maintenance of community resources.

Though different social actors have tailored sustainable development to suit their particular circumstances, the debate over this issue has created an opportunity for governments to move from a defensive posture toward the green movement to one that enables them to influence arguments about the environment and economy. Governments have adopted the role of arbiter between competing interests, calling for a “balance” between economic and environmental perspectives.

Government agencies have, in some countries, extended the definition of *standard of living* from pure economic and material measures, such as income levels and consumption of goods, to include the idea of **quality of life** (which may cover the environment, social justice, and personal freedoms) and embrace a variety of values including ecological, aesthetic, and ethical considerations. Governments, like environmental and business groups, have discovered opportunities for developing new markets, products, and technologies in response to these public concerns.

The adoption of concepts such as sustainable development is also linked to the attempt by governments to control or influence debates about the environment. Ideas such as sustainable development are open to a wide variety of interpretations. If these frameworks are too precise (or insufficiently vague), the potential for conflict might increase. Governments are placing more emphasis than ever before on environmental protection, with efforts to incorporate the environment into decision making and production processes and services. Still, for some environmentalists, support for sustainable development represents a fraudulent attempt to divert efforts from the fundamental problems that affect our planet. They argue that sustainable development is essentially leading to only surface-level changes that do not get at the heart of capitalism’s exploitation of nature. Green-growth and green-economy

concepts have been subjected to similar criticisms. Others, however, are prepared to consider the possibilities for overcoming the tension between development and environmental protection.

The **Sustainable Development Goals (SDGs)** adopted by the United Nations Assembly in 2015 show that the discourse on sustainable development has become central in world politics. The SDGs provide governments a guideline for sustainable development policies. The strategies pursued by government agencies for implementing sustainable development may include: legislation that ensures that environmental concerns form part of planning at all levels of government activity; rewards for government and private organizations that reduce levels of pollution and penalties for those who do not; and promotion of initiatives to develop industries in the field of environmental protection.

In the 1990s, green organizations and political movements put forward numerous proposals for how environmental protection could be linked to new forms of employment. Trade unions, business organizations, and industrial groups have become interested in the burgeoning environmental-protection industry and markets for treating and recycling waste, reducing air pollution, and cleaning water. *See also* GREEN CONSUMERISM; POSTMATERIALISM; RIO+20; SUSTAINABLE DEVELOPMENT GOALS (SDGs); WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT.

**SUSTAINABLE DEVELOPMENT GOALS (SDGs).** The United Nations Assembly adopted 17 Sustainable Development Goals (SDGs) and 169 targets on 25 September 2015. These goals are the second set of globally agreed-upon goals following the **Millennium Development Goals (MDGs)** of 2000. The official name of the SDGs is “Transforming Our World: The 2030 Agenda for Sustainable Development.” Since the 1972 **United Nations Conference on the Human Environment** (Stockholm Conference), **sustainable development** has become a core issue in the UN agenda.

The two main discussion streams, sustainable development and development goals, were merged into one at the **Rio+20** conference. Compared to MDGs, SDGs have a broader scope and call for extensive participation from all countries. This is to help make the goals more achievable. The goals strongly emphasize tackling **climate change** as a means of eradicating poverty and facilitating sustainable development. They are not legally binding, but countries are expected to establish their own national framework for action and implementation. The goals are as follows:

1. End poverty in all its forms everywhere.
2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
3. Ensure healthy lives and promote well-being for all at all ages.



4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure availability and sustainable management of water and sanitation for all.
7. Ensure access to affordable, reliable, sustainable, and modern energy for all.
8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
10. Reduce inequality within and among countries.
11. Make cities and human settlements inclusive, safe, resilient, and sustainable.
12. Ensure sustainable consumption and production patterns.
13. Take urgent action to combat climate change and its impacts.
14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt **biodiversity** loss.
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.

*See also* RIO+20.

**SUSTAINABLE INVESTMENT.** In 1992, the United Nations Environment Programme Finance Initiative was formed as a global partnership between **UN Environment Programme (UNEP)** and the financial industry to promote the contribution of financial services to **sustainable development**. Long before this, sustainable investment—also referred to as *socially responsible* or *impact* investing—was already going on in different parts of the world without necessarily being called such. The movement started with religious groups and universities, particularly in the **United States**, refusing to invest in corporations profiting from the South African apartheid regime or the Vietnam War, but also from the production and trade of alcohol or tobacco. Since then, sustainable investment has diffused globally and diversified locally. Currently, the term mainly refers to financial investment decisions that are based on environmental, social, and governance standards. Parts of the green movement have joined the sustainable investment commu-

nity to address the world's ecological, environmental-protection, and climate change-related challenges via the financial markets. In doing this, they urge corporations around the globe to incorporate the sustainability imperative into their business operations.

Sustainable investment decisions may take the form of divesting from polluting companies, investing in green businesses, or obtaining sufficient shares of stocks to have a voice in shareholder meetings to shift business practices to a more sustainable direction. Some banks, such as the German Umweltbank, have chosen to focus their investment portfolios on environmental protection. Others now offer green investment opportunities in the form of green certificates, derivatives, and funds. These may invest solely in renewable energy or in companies that are listed on a so-called sustainability index, like the ÖkoDAX, the FTSE4Good, or the Dow Jones Sustainability Index. The indexes are compiled via sustainability ratings, where corporations are evaluated according to various nonfinancial indicators, such as their CO<sub>2</sub> footprint, environmental-management system, water usage, environmental fines, and green procurement, but also according to other sustainability-related criteria like the number of women in leadership positions, or lobbying details.

The founding of the nonprofit organization Global Reporting Initiative (GRI) in 1997, with the help of the Coalition for Environmentally Responsible Economies (CERES), the Tellus Institute, and UNEP, was an important milestone. GRI promotes sustainability accounting and advocates for sustainability-reporting guidelines on a global scale encouraging especially companies, cities, and municipalities to publish their environmental, social, and governance-specific impacts on sustainable development. The framework is regularly in flux due to modifications made by numerous multi-stakeholder working groups. By the end of 2015, over 8,500 organizations had voluntarily applied the GRI's sustainability-reporting standards, of which almost 2,000 were multinational enterprises.

Other important initiatives were the UN-supported Principles for Responsible Investment in 2006 and the UNEP Finance Initiative, Principles for Sustainable Insurance in 2012. In addition, there are a growing number of institutional-investor initiatives, such as those by the CDP, formerly known as the "Carbon Disclosure Project," and pension funds such as **Norway's** Government Pension Fund Global (GPF), which have done much to advance new and large-scale approaches to sustainable investment. The Norwegian Pension Fund, for example, was ordered by Parliament to divest from companies whose businesses rely at least 30 percent on coal. The CDP, which is backed by 822 international institutional investors with assets of about US\$95 trillion in 2015, urges corporations to disclose their progress on reducing greenhouse gas emissions, water usage, and strategies for managing climate change, water, and deforestation risks. This information is stored in

an online database that asset managers may use for their investment decisions. Both the GPFG and CDP encourage companies to be more transparent about their political-interest-representation activities on climate change matters.

Despite the enthusiasm about these developments, the niche character of sustainable investment has to be taken into account. There is also some skepticism within some corners of the green movement that sustainable investment is a form of **greenwashing** that is capitalism-affirming and leads to the commodification of nature.

### **SUSTAINABILITY TRANSITIONS RESEARCH NETWORK (STRN).**

There is growing interest in researching the causes and effectiveness of different approaches to sustainability transitions, for example, in the energy sector and in relation to new technologies. Sustainability transitions are defined as long-term transformation processes of industries, socio-technical systems, and societies in more sustainable directions.

**SWEDEN.** Sweden is widely considered to be one of the pioneer countries that helped to place environmental matters on national and international political agendas. Regarded for many decades as the archetype of a social-democratic and corporatist state, Sweden has nonetheless experienced difficulties in accommodating the demands of the green movement. Although the Swedish government was primarily interested in production and economic development, in the 1960s it developed structures to address some environmental concerns, such as air and water pollution and mercury poisoning of fish and birds. The Environment Protection Act of 1969 was a major legislative initiative. There was also a parallel effort to coordinate the activities of diffuse government bodies by forming the National Environment Protection Board. Water-quality improvement through sewage treatment is among the successes of these initiatives.

Concern about other environmental issues can be traced to **acid rain** damage to Sweden's lakes and rivers. Sweden created a network of observers across Europe to record levels of acid pollution. The Swedes were at the forefront of international efforts in the 1970s to convene the **United Nations Conference on the Human Environment (UNCHE)** in Stockholm in 1972.

The most divisive environmental issue of the 1970s, and the one that exposed the weakness of the dominant corporatist regime in Sweden, was nuclear energy. The Swedish government has widely been regarded as one of the most open and responsive to environmental concerns. Anxiety about the development of nuclear power posed a threat to this model.

As in many other western European countries, **anti-nuclear protests** paved the way for the formation of green political parties. Sweden relied heavily on nuclear power development for its energy needs, a policy championed by the Social Democratic Party that had governed Sweden for several decades. In 1976, a decisive shift in electoral politics occurred. The Center Party, led by Thorbjorn Falldin, campaigned on an anti-nuclear platform. It gained 24 percent of the vote and displaced the Social Democrats in the government after forming a coalition with the Conservative and Liberal Parties. These two parties did not, however, share the goals of the Center Party, at least on the question of nuclear power. The unwillingness of the Center Party to confront its coalition partners over this question undermined its credibility among environmentalists, and disagreement over the development of nuclear power eventually led to the collapse of the coalition.

The 1979 **Three Mile Island** accident in the **United States** further changed public opinion on the issue of nuclear power, leading the Social Democrats to hold a national referendum on its future. The March 1980 referendum offered three options. The Center Party and the Communist Party advocated an end to nuclear power expansion and phasing out the six reactors in operation within 10 years. The Social Democrats and the Liberals called for a nuclear power phase-out, subject to the following condition: the 12 reactors that were in operation, completed, or under construction could be used and would be held under state control. The Conservatives stood behind the phase-out of nuclear power but, like the Social Democrats and the Liberals, argued for the utilization of the 12 reactors in operation, completed, or under construction. The Center and Communist Parties' position attracted 38.7 percent of the vote, the Social Democrats and Liberals', 39.1 percent, the Conservatives', 18.9 percent. Following the referendum, the government made the decision to close down all nuclear reactors by the year 2010. However, the referendum also allowed the government to proceed with the construction of six more nuclear power plants, thereby strengthening the dependence of the country on this form of energy. In 2009, with uncertainty about energy stability, the Swedish parliament reversed the phase-out decision by allowing for a replacement of the existing reactors. Sweden has legislated a plan to become carbon neutral by 2045.

Miljöpartiet de Gröna, the Swedish Green Party, was founded in September 1981. In 1988, it overcame the 4 percent threshold for parties to enter Parliament and was the first new party in 70 years to gain representation. It was allocated 20 seats after acquiring 5.6 percent of the national vote. This success can be attributed to the significance attached to the environment during the election campaign, dangers posed to the Swedish population by the **Chernobyl** disaster in 1986, and strong reaction against the style of professional politics that characterized the major parties.

The catastrophes at Three Mile Island in 1979 and, even more significantly, at Chernobyl in 1986 played a crucial role in shifting public opinion on environmental issues. The Chernobyl accident had a greater direct impact on Sweden than on any other country outside the Soviet Union. Restrictions were introduced on the consumption of fresh fruit, vegetables, and livestock. At the 1988 elections, environmental issues were prominent on the political agenda and included debates on how to bring about the closure of all nuclear power plants, legislation and taxation to combat all forms of pollution, investment in **renewable energy** (including greater use of natural gas, solar energy, and wind power), restrictions on the use of chemicals in agriculture, new automobile speed limits, reductions in chlorine emissions from pulp mills, and much stricter regulation of the use of **chlorofluorocarbons (CFCs)**.

In 1991, the Miljöpartiet de Gröna polled only 3.4 percent and lost all of its seats. The environment was not a major issue during this election campaign, and many voters were apparently deterred from supporting the party because it had become more explicit in leaning toward the left. However, in 1994, the party recovered in a convincing manner by obtaining 5 percent of the vote and 18 seats. It began to play an important role in providing and administering services such as health care, education, and housing, as well as in supervising arrangements for environmental standards. Among the main factors that contributed to the revival of Miljöpartiet de Gröna were its strong stance in opposing Sweden's membership in the European Union (EU), the general mistrust of professional politicians, and, paradoxically, its ability to present itself as a conventional party and avoid some of the difficulties associated with divisions between fundamentalists and realists that have troubled other green parties. In the 1998 parliamentary elections, support for the party dropped slightly to 4.5 percent, but because of the weak showing of the Social Democratic Party, the Social Democrats invited the de Miljöpartiet de Gröna and the Left Party into a coalition government. In the 2006 elections, the coalition won 5.24 percent of the vote and 19 seats. The party's votes increased to 7.3 percent in the 2010 election, but then dropped to 6.8 percent in 2014 (25 seats), and 4.4 percent (16 seats) in 2018. Nevertheless, after months when no government could form, complex coalition negotiations resulted in an agreement that kept Miljöpartiet de Gröna in a coalition with the Social Democrats. Six ministries were given to the party: Climate and Environment (minister and vice minister), Education, Housing and Urban Development and IT, Financial Market and Consumer Affairs, Culture and Democracy, and Development Assistance.

Miljöpartiet de Gröna has taken on many other issues, including self-government at the local level, decentralization of the state, peace and disarmament, and a reduction in economic growth. The party has challenged assumptions about the state's involvement in owning enterprises, creating

wage-earner funds, and promoting the arms industry and spending on defense. Miljöpartiet de Gröna has continued to espouse collectivist goals such as social justice and fairer and more equal distribution of income and wealth. Additionally, the party has worked on climate issues and supports the shift in taxation policy concerning carbon-intensive products. A large proportion of Miljöpartiet's members were formerly supporters of the Center Party and the Social Democrats. Most are young, middle class, and well educated. Women and people employed in the public sector are among its most numerous members. However, like other green parties, Miljöpartiet de Gröna has been vulnerable to the propensity of voters to switch parties between elections. In the 2019 European Parliament elections, the Miljöpartiet de Gröna won two seats.

**SWITZERLAND.** A proposal in the early 1970s to build a highway through the city of Neuchatel mobilized the local population. Opponents of the project, unable to persuade the authorities to reverse their decision, ran in the communal elections in 1972 and won 8 of the 41 seats in the local parliament. This paved the way for the foundation of the first green party in Switzerland, the *Mouvement populaire pour l'environnement* (MPE).

Inspired by the activities of the MPE in Neuchatel, Jean-Jacques Hediguer founded an MPE in the canton of Vaud. The organization attracted 5.6 percent of the vote in Lausanne and won 5 of the 100 seats on the town council and 15 other seats in various communes. Divisions within the MPE-Vaud led to the formation of the *Groupement pour la Protection de l'Environnement*, which in 1977 attracted 8.2 percent of the vote and won 8 seats on the town council and in 1979 gained a seat in the national parliament—the first national parliamentary seat won by any Green in the world. Another green party, in the German-speaking part of Switzerland, was founded in 1978. The *Grüne Partei Zurich* made steady progress, and in 1987 won 22 out of 180 seats in the cantonal parliament.

Before the 1987 national elections, a federation of green groups (*Föderation der grünen Parteien der Schweiz*) formed a national Swiss Green Party (*Grüne Partei der Schweiz* [GPS]) in May 1986. In 1987, it secured 119 seats in cantonal parliaments, and by 1991 the number had risen to 154 seats. This is only a partial measure of the strength of the green movement. The total number of seats held by all green and alternative parties was somewhat greater. In 1987, a coalition of leftist environmental groups, the *Grüne Bündnis Schweiz*, polled 4.3 percent nationally and secured five seats. However, this was a fairly loose coalition, and by 1991, the GPS had become the most influential and well-known green party.

As was the case in many other countries, the mid-1990s proved a difficult time for the greens in Switzerland. The GPS secured only eight seats in the parliament, but subsequently, two other members of parliament who had

been elected on alternative lists joined the party, bringing their number to 10. With unemployment a major concern, voters shifted their support to the Social Democrats, which saw a surge of support. In 1999, the GPS won 5 percent of the vote and secured 9 seats, plus 1 from another list. In the 2007 election, the Greens won 9.6 percent of the vote and won 20 seats on the National Council and 2 seats on the Council of States; it was the best performance of the party. As of 2017, the Greens have 11 seats on the National Council and 1 seat on the Council of States.

Over time, different environmental issues have been prominent on the political agenda. In the 1970s, a powerful social movement against **nuclear energy** development arose. The most well-known protests occurred in 1975 against the proposed nuclear power plant at Kaiseraugst. Eventually, environmental groups and other political organizations succeeded in persuading the government to offer compensation to the developers for not completing this project and in introducing a 10-year moratorium on nuclear power.

Since the 1970s, environmental groups have campaigned to reduce automobile pollution—for example, by attempting to prevent new highway construction. By the 1990s, motorists expressed a strong reaction against the government-imposed restrictions on them through significant support for the AutoPartei (Car Party) and for the Lega Ticinese (Ticino League). Both parties were also opposed to loosening restrictions on immigration and admitting asylum seekers to Switzerland.

Support for environmental groups and political organizations remained strong. In the 1980s, the destruction of forests by **acid rain** and the nuclear disaster at **Chernobyl** focused attention on the environment. Moreover, there was an enduring concern about air pollution and water-supply contamination. The Swiss population has voted to abandon nuclear energy by 2034. The country is ambitiously promoting energy efficiency and renewable energies in an effort to reduce greenhouse gas emissions.

Over time, dominant parties have adopted significant components of the green agenda. In addition, the well-established conservation groups and new social movements that maintain a watchful eye on environmental issues operate at a distance from both the GPS and dominant parties. This allows groups such as the **World Wide Fund for Nature (WWF)** to gain better access to government and develop an independent stance on many issues. The GPS program covers many of the issues brought up by environmental groups, while trying to articulate a broader agenda for political reform.

Apart from the environmental issues mentioned above, the GPS has sought to develop policies on how to check economic growth and focus on **sustainable development**, using taxation, especially energy taxes, instead of indirect taxes; transportation (particularly on promoting public transport); and a range of social-justice measures (including a **guaranteed minimum income**, more equitable distribution of wealth and resources, and the protection of

minorities and disadvantaged groups). In addition, in the GPS's most recent policies, the party seeks to set out on a course of openness and to further integrate immigrants. The GPS has also attempted to gain support by focusing on two issues that have preoccupied many people: first, the system of political patronage and control exercised by established political elites and interest groups and, second, concern about the impact that membership in the European Union (EU) would have on the environment as well as on certain valuable elements of Swiss culture and political life.

The GPS has, like other green parties, embraced the principles of decentralization, a precautionary approach to development projects, and the idea of government and industry on a small scale. Coalitions with other parties in order to form a government commonly occur in municipal and cantonal settings. There was successful collaboration, for instance, between 1986 and 1990, in the canton of Bern, over issues such as energy conservation, nuclear power, education, and transportation.

Above all, the GPS has developed a pragmatic approach to politics along the lines espoused by the realists in other green parties. It has taken full advantage of entitlements to membership in parliamentary committees and participated in the formulation of policies as well as in the negotiation of compromises with other parties. The GPS, like many other green parties, seeks to balance a fundamental commitment to environmental protection with achieving changes in policy within the prevailing political structures and to meet the challenge of retaining a distinct identity as other parties adopt substantial elements of the green political agenda. *See also* "A BLUEPRINT FOR SURVIVAL"; CARBON PRICING; PRECAUTIONARY PRINCIPLE; SMALL IS BEAUTIFUL.



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**TAIWAN.** As one of the four Asian Tigers since the 1960s, Taiwan experienced its rapid economic growth and industrialization with little concern for the environment. It was only in the late 1980s that environmental awareness began to rise in society, and hence more and more civil-society groups were formed. These NGOs were mostly focused on pollution, big industrial projects, and nuclear power plants. The Environmental Protection Administration was established in 1987.

Prior to the lifting of martial law in 1987, social movements were greatly restricted by the authoritarian Kuomintang (KMT) government. While addressing environmental issues, the green movements in this period often worked alongside groups struggling for democratization. This resulted in cooperation between green NGOs and the opposition party, Democratic Progress Party (DPP), in the late 1980s. The DPP won the presidential election for the first time in 2000 and decided to halt a controversial plan to build



**In the office of the Citizen for Environment, a Taiwan green NGO. Courtesy of Citizen for Environment, Taiwan.**

a fourth nuclear power plant. However, strong pressures from the KMT-controlled parliament soon made the DPP revoke its decision. This was a massive failure and setback for the anti-nuclear movement. Since then, mistrust and divisions have appeared in the cooperation between green NGOs and the DPP. The anti-nuclear movement reemerged in 2011 due to the Fukushima Daiichi Disaster. In 2014, the KMT government suspended the fourth nuclear power plant project after a series of large demonstrations and a hunger strike by former DPP chairman, Lin Yi-Hsiung. In 2016, the DPP won the presidential seat and became the ruling party. After a record hot summer in 2018, the Taiwanese people voted against a nuclear phase-out in a referendum; nevertheless, in 2019 the government of Taiwan, led by the Democratic Progressive Party, announced its plans to move forward with the phase-out by 2025, as it had campaigned back in 2016.

The Green Party Taiwan was established in 1996 and won one seat in the National Assembly election held in the same year. Since then, it has not won any seats at the national level, but two of its candidates successfully entered local parliaments in 2014. In the 2018 municipal elections, the Green Party Taiwan won three council seats and one third-level municipal council seat. The party is a member of the Asia Pacific Greens Federation and Global Greens. The use of media platforms has strengthened the ability of the green movement and NGOs to obtain political and economic resources, expand messaging to the public, and reach a wider and, especially, younger audience.

**TEA PARTY.** The Tea Party has been a leading voice of the anti-environmental movement and climate change denial within the Republican Party of the **United States**. The Tea Party is a grassroots, conservative movement that has reshaped the Republican Party into a far more socially conservative group. Tea Party Republicans are less likely than Republicans as a whole to believe climate science. A 2013 Pew Research Center poll found that only a quarter of Tea Party supporters believed there was solid evidence of climate change, compared with slightly over 60 percent of non-Tea Party Republicans. See *also* CLIMATE SKEPTICS.

**THAILAND.** A “second-generation tiger,” Thailand underwent rapid economic development but was hit hard by the Asian financial crisis of 1987. It has had trouble sustaining democratic rule and has been under military rule since the 2014 coup d’état. The country has been hit hard by various natural calamities, including the devastating 26 December 2004 **Indian Ocean tsunami**.

In the late 1980s, environmental pollution sparked protests and the birth of Thailand’s green movement. Environmental nongovernmental organizations (NGOs) emerged and, along with other groups such as community-develop-

ment groups, began environmental activities related to conservation, environmental education, water and energy issues, forest and biodiversity protection, and public health. Thailand has one of the world's fastest deforestation rates and has problems with illegal logging. Urban and industrial pollution are putting poorer communities near industrial areas under great health and security concerns.

Nongovernmental organizations must register with the Thai government. Registered NGOs may apply for governmental financial support. However, the high financial costs involved with becoming a registered organization prevent many of the smaller, local groups from attaining registered status. Most Thai environmental NGOs receive funding from foreign donors. The National Environmental Board and the Thailand Environmental Institute provide further representation for NGOs and assist them in coordinating efforts with the Thai government.

As in **Malaysia**, there is a growing Buddhist **ecology** movement in Thailand. Buddhist monks in Thailand are becoming increasingly involved in deforestation-prevention projects and other conservation issues, applying their Buddhist beliefs to environmentalism and promoting environmental ethics and environmentally sound practices in their communities.

The Thailand Environment Foundation, based in Bangkok, was established in 1993 to promote **sustainable development** through grassroots action as well as policy research and promoting public awareness. The foundation operates through the Thailand Environmental Institute. Princess Maha Chakri Sirindhorn of Thailand has been a strong advocate of sustainable development initiatives and environmental protection.

**THINK GLOBALLY, ACT LOCALLY.** This concept has been attributed to environmentalist Rene Dubos and used as a slogan by the green movement. It endeavors to establish alternative ways of social action at the local level and to demonstrate both in symbolic and practical terms the possibility for transforming the world. The focus on acting locally corresponds to the focus on decentralization and bioregionalism, as well as on the orientation of many green political organizations and social movements. The slogan has been used to great effect in mobilizing people to take action in their local communities on environmental protection; creating alternative lifestyles, including providing social and other services; and campaigning against specific industries, notably the weapons industry, and enterprises that have a deleterious impact on the environment.

**THREE GORGES DAM.** The idea of damming the Yangtze, one of the world's great rivers, was originally conceived by Sun Yatsen in 1919. Planning for the dam began in 1954 under the leadership of Mao Tsetung. Con-

struction began in 1984 but then was temporarily suspended in 1989 due to strong citizen opposition. After the 1989 Tiananmen Square incident and the subsequent clampdown on protest activities, Premier Li Peng pushed forward on the project. The National People's Congress approved the construction plans in 1992, although one-third of the delegates either voted against it or abstained from voting, suggesting that there was still considerable opposition to the project.

Full operation began in 2012. The Three Gorges Dam was slated to be the world's largest hydroelectric dam with 22,500 megawatts of installed capacity, but the Itaipu hydroelectric dam built on the Paraná River between **Brazil** and Paraguay in 1984 has surpassed the Three Gorges Dam in terms of energy production. Critics of the Three Gorges Dam have condemned the irreparable ecological damages it has caused, the tremendous historical and cultural loss it has contributed to along the Yangtze River, and the human suffering brought about in resettling around 1.3 million people. They also fear the long-term impacts on the Yangtze's ecology and the damage incurred should the dam weaken or burst. Supporters argue that the dam is expected to control flooding that in the past has killed tens of thousands. Its 34 generators also contribute substantially to China's annual electricity needs. The Chinese government has called the dam the world's largest water conservation project. The hydropower, supporters argue, offset carbon dioxide emissions that would otherwise be produced by burning coal to produce electricity.

Protest against the dam within the **People's Republic of China** has been suppressed by the state. Author Dai Qing was arrested for writing a book in 1989 criticizing the dam. International environmental groups, including the International Rivers Network, urged international banks and export credit agencies not to fund the project, but they fought a losing battle. *See also* SUSTAINABLE INVESTMENT.

**THREE MILE ISLAND.** This is the site of a nuclear power plant in Harrisburg, Pennsylvania, and of a near catastrophe in March 1979 when, due to human and mechanical error, a loss of cooling waters led to a partial fuel meltdown. Radioactive gases were emitted from the plant, and pregnant women and young children in the surrounding district were urged to leave the area. The accident was caused by defects in machinery and negligence by those responsible for supervising the equipment, particularly in dealing with an emergency situation. The accident made apparent just how unprepared the industry and the Nuclear Regulatory Agency were for dealing with such an accident, leading to the development of new safety standards. The publicity surrounding this incident helped to mobilize further anti-nuclear protests in

the **United States** and other countries. A popular film based on similar, fictional events, *The China Syndrome*, provided an additional stimulus to these protests.

**TIPPING POINTS.** This concept refers to the idea that an ecological or climatic system can be so altered as to be unable to return to a prior state of relative stability. Examples abound. In fisheries, a tipping point may be reached when fish are overfished to the point that they can no longer regenerate. This logic applies to all species that are hunted, harvested, or killed in other ways. An insect population could, for example, reach the tipping point beyond which the population is no longer able to regenerate. In the climate system, a tipping point could be reached when, for example, temperatures rise dramatically as a result of increased concentrations of greenhouse gases in the atmosphere, leading to melting of glaciers and polar ice and long-term and irreversible changes in subsequent weather patterns. *See also* BIODIVERSITY; CLIMATE CHANGE; PLANETARY BOUNDARIES.

**TOP RUNNER PROGRAM.** Japan's Top Runner Program has its roots in the Law Concerning the Rational Use of Energy that was originally passed in 1979 at the time of the second oil shock. With the goal of strengthening energy conservation and efficiency, the law mandated energy management in the manufacturing and commercial sectors and set energy-efficiency standards for houses, building, manufacturing, and equipment. One amendment to the law led to the launching of the Top Runner Program in 1999. The program was introduced both to spur production innovation and promote the development of more energy-efficient appliances and to help curb rising emissions trends in the residential, commercial, and transportation sectors. Initially, it covered 11 product lines. The program has been quite successful at speeding up the introduction of more energy-efficient models to the market. This works by turning the most efficient product standard into the standard for the entire industry; the industry must bring all of its products up to this energy-efficiency level within a given time frame, usually four to eight years. The number of products covered by the program has increased with time. The program covers such product lines as refrigerators, washing machines, television sets, passenger cars and freight, heating and cooking stoves, and vending machines. The program employs a naming-and-shaming tactic for firms that fail to meet the new standards and rewards products that meet the standard with a Top Runner label. There is also now a Top Runner standard for houses and requirements for annual energy efficiency improvements for transport operators and the cargo sector. *See also* JAPAN.

**TORREY CANYON.** In the 1960s, a number of catastrophes served to draw attention to the need for both a more powerful green movement and improved action by governments dealing with environmental problems. The oil tanker *Torrey Canyon* hit rocks off the southwestern coast of England in March 1967, leading to a spill of 875,000 barrels of oil. Much of it ended up on the shores of Cornwall and Brittany. Attempts to deal with the catastrophe were slow and very costly. There was limited experience with oil spills, and many of the countermeasures taken, including the use of toxic chemicals to break up the oil slick, were themselves harmful to the environment. Although governments have responded over time with more stringent safety requirements, oil spills and disasters at sea continue, as demonstrated by the disastrous spill from the oil tanker *Exxon Valdez* and the explosion and subsequent oil spill at the BP offshore oil rig **Deep Water Horizon**, the world's worst oil spill to date.

**TRAGEDY OF THE COMMONS.** In a paper first published in 1968, biologist Garrett Hardin coined this term to describe how growing human-population pressures and the ever-growing demand for use of the commons were causing such harm to the planet that the basis for life could be put in jeopardy. He did this using the example of common pastures used by herders to feed their animals. So long as the number of herders and their animals remains limited, the commons can sustain all. With more herders and more grazing animals, pressures on the commons intensifies to the point that eventually the land can no longer support them, leading to both an environmental and productivity decline.

Hardin argued that the attempt to maximize use of common land, while yielding some benefit to each individual, ultimately has devastating consequences on the community as a whole. Hardin argued that it could be necessary to set aside the principle of freedom in the use of the commons and resort to authoritarian controls. He proposed a variety of mechanisms, including restrictions on access to the commons, the introduction of taxes and charges to reduce pollution and control waste disposal, and a highly controversial proposal to impose constraints on the right to bear children. *See also* OSTROM, ELINOR (1933–2012); POPULATION GROWTH.

**TRAINER, TED.** *See* DEINDUSTRIALIZATION.

**TURKEY.** One of the first environmental movements in Turkey involved the protests against “urban renewal” projects in the Ottoman times, between 1912 and 1919. After the Turkish politics adopted a multiparty system in 1946, social organizations became more active, including environmental NGOs. The environmental organizations formed in the early years were

mainly professional groups, such as those of doctors and biologists. In the late 1970s, grassroots groups emerged against pollution caused by industrialization, and anti-nuclear protests rose against a planned nuclear power plant in Akkuyu. The environmental movement at that time mainly focused on raising awareness on the value of the environment. Following anti-nuclear, peace, and woman's movements in the 1980s, the first Green Party (Yeşiller Partisi) was established in 1988 but only lasted until 1994.

Various local and national environmental NGOs have been established since the 1990s. Examples include Natural Life Protection Association, **Greenpeace**, TEMA (Erosion Control and Reforestation Foundation for the Protection of Natural Wealth), Foundation for the Protection and Promotion of Environmental and Cultural Values, Turkey Environment Association, Environmental Protection and Research Foundation, Environment Volunteers Association, Foundation for Environmental Protection and Packaging Waste Assessment, Turkey Clean Sea Association, Turkey Environment Education Association, Turkey Environmental Protection and Greening Agency, and Association of Nature. However, economic growth is still a dominant concern in Turkey, and environmentalism is regarded as a secondary issue. In 2008, a new Green Party (Yeşiller Partisi) was established, and four years later it merged with the Equality and Democracy Party to form the Greens and the Left Party of the Future (Yeşiller ve Sol Gelecek Partisi). The party's beliefs are based on green and leftist values; it is an associate member of the European Green Party.





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**UKRAINE.** Ukraine attracted the West's attention as the result of its Orange Revolution, when in late 2004 hundreds of thousands of protestors gathered in the streets to protest the electoral fraud that rigged the election in favor of Viktor Yanukovich. The Supreme Court annulled the election results; a new election brought pro-Western, opposition rival Viktor Yuschenko into the presidency. Support for Yuschenko's government, however, was relatively short-lived, and the country is again shifting toward the right. Pro-Russian Yanukovich was able to stage a comeback during this time. The fortunes of the Ukrainian Greens appear to have been influenced by these larger political changes.

The Chernobyl nuclear disaster and the many pollution problems related to the Soviet-era economy's reliance on heavy industry and mining gave birth to a widespread **ecology** movement. Scientists and activists formed environmental groups in almost every region of the country. In 1987, they created the national association Green World (Zeleny Svit). In the tumultuous year 1989, Zeleny Svit became a major political force. Zeleny Svit emphasized a number of environmental problems, including **acid rain**, transboundary pollution, destruction of land fertility, **climate change**, and toxic-waste management.

While the green community suffers from lack of access to adequate funding and governmental support, it also faces numerous institutional barriers against their activities. Despite this, there are several hundred environmental nongovernmental organizations (NGOs) in Ukraine. The Ukrainian Green Party (Partija Zelenykh Ukrainy) was established in 1991 as the successor of Zeleny Svit and has branches throughout the country. It became a member of the **European Federation of Green Parties** in 1994. As with the newly emerging green parties in other post-Soviet states, the party was eager to find ways to move the country away from the ecological nightmares that were produced by the Soviet economic model. Like many other green parties, it calls for developing an ecologically sustainable economic and social system. It also hopes to awaken stronger ecological values within society. However, this may be difficult for the party as the country struggles through major

political upheavals. In the 1998 parliamentary elections, the party did quite well, with 5.5 percent of the vote. This enabled it to select 19 delegates from its party list. In the 2002 elections, the party lost all of its seats, showing the change in the political direction of the country. In the 2006, 2007, 2012, 2014, and 2019 elections, the party received less than 1 percent of the national vote and failed to enter the parliament.

**UNDER THE DOME.** Chai Jing, a famous Chinese journalist who worked for the Chinese state media's CCTV from 1999 to 2014, produced this 2015 documentary film on air pollution and its potential health impacts. She is best known for her reports on SARS (Severe Acute Respiratory Syndromes) and her humanitarian concerns for Chinese society and development. In 2013, Jing published her autobiography, which became a best-seller.

The documentary was first released on Youku and *People Daily* online (the state media) on 28 February 2015. *People Daily* online followed up with an interview with Chai Jing that was published shortly before the annual meeting of the National People's Congress and the Chinese People's Political Consultative Conference. The documentary attracted huge levels of attention. By the morning of 2 March, *Under the Dome* had already been watched almost 200 million times. The Chinese environmental minister, Chen Jining, was reported to have watched the documentary and voiced his admiration to Chai Jing for her contribution in raising public environmental awareness. However, on 6 March, the documentary was suddenly prohibited and removed from the public sphere. There was no explanation from the government as to why the documentary was banned.

Although the documentary was banned, it remained one of the most influential and controversial ones in **China**. It resonated with the public because of their own experiences with pollution, the interviews conducted with experts and government officials, and the creative visualization of research and data. Its critical stance on coal consumption and the monopolized oil market generated awareness and debates on these issues.

**UNITED KINGDOM.** One of the most striking features of the green movement in the United Kingdom is the inverse relationship between the strength of green political organizations and the degree of access afforded by the bureaucracy to environmental groups. The failure of the Green Party to win representation has often been attributed to the restrictive electoral system. At the same time, the administration has been open to environmental groups' ideas ever since the 1960s, and especially following the debate about *The Limits to Growth*, about the threats posed to the environment by pollution, and the expansion of the nuclear power industry.

Conservative governments dominated British politics from 1979 to 1997. Their preoccupation with reducing the role of the state meant that there was initially little focus on addressing environmental problems. Rather, the focus was on removing impediments to the free market. This resulted in environmental groups having somewhat reduced influence and access to government agencies. Although environmental groups did not sever their links with established institutions, they were, to an extent, forced to adopt a more militant approach and began to appeal directly to the public for support. They were able to exert influence, especially in public inquiries, in the system of parliamentary select committees (established in 1979) and through local authorities.

In 1979, the Liberal Party appeared to be the only one of the major parties to take environmental issues seriously and was certainly the only one to favor community-based politics at its core. By the mid-1980s, the United Kingdom, under the Conservative government led by Margaret Thatcher, had been labeled by many commentators as the “dirty man of Europe,” partly because of its reluctance to implement directives by the European Community (predecessor to the European Union) on environmental protection and partly because the government was resolved to promote economic development regardless of the social and environmental costs. The Conservative government came under pressure from its own ranks on issues such as the protection of rural land (the Green Belt), implementation of the Wildlife and Countryside Act, and **acid rain**, and also from the Royal Commission on Environmental Pollution for being unresponsive to urgent problems and not coordinating different government agencies’ work.

Additionally, the government was becoming aware of the drift of public concern about the environment and in 1984 introduced reforms in a number of areas, including greater coordination of government agencies to combat pollution, and statutory intervention to discourage certain farming practices and encourage preservation of the rural landscape. In 1985, the government came under further pressure, on this occasion from the Labour and Social Democratic Parties, which produced detailed policy statements on environmental protection. However, it was only after their third successive electoral victory, in 1987, that the Conservatives began to consider the environment a key issue on the political agenda. On 27 September 1988, in a speech delivered to the Royal Society, Margaret Thatcher used the growing concern about problems such as greenhouse gas emissions, the depletion of the **ozone layer**, and acid rain to place the environment high on the national political agenda for the first time.

Within the Conservative Party, the tide was also turning against certain aspects of its pro-development policies particularly facilitating the decline of local authorities’ influence over planning and the aggressive approach to the development of land for housing. The environment minister, Nicholas Rid-

ley, came under intense pressure for promoting free market policies in this area. Rather than concede to the environmentalists, he espoused the importance of market mechanisms in addressing environmental problems, notably the **polluter pays principle** and the need for **sustainable development**. Nonetheless, he was replaced by Chris Patten, who was far more interested in landscape preservation, enforcing government controls over landscape planning, and engaging in dialogue with environmental groups.

Although there was a strong reaction among some Conservatives against softening the government's approach to economic development, in 1990 Patten directed the production of a white paper, "This Common Inheritance." Though it contained few specific policy commitments, the document attempted to reinforce the new prominence given to environmental protection and to outline principles for action, including the **precautionary principle**, the notion of stewardship, sustainable development, and the value of both statutory intervention and market mechanisms.

Although the environment still did not feature as a key issue in electoral politics, at the level of government administration, the influence of environmental groups and of scientific experts was on the rise. Among the major reforms was the creation in 1987 of Her Majesty's Inspectorate of Pollution to coordinate pollution inspection. At first, the inspectorate had few effective powers. However, the Environmental Protection Act of 1990 provided the inspectorate with the necessary legal basis for fulfilling some of its potential as a pivotal agency in regulating industry.

The ousting of the Conservative Party by the Labour Party in 1997 heightened the place of environmental issues on the policy agenda. Prime Minister Tony Blair promised to prioritize sustainability policies and in 2000 created the UK Sustainable Development Commission.

The green movement successfully placed pressure on Blair's government to take **climate change** and sustainable development seriously. After the **United States** pulled out of the **Kyoto Protocol** in 2001, the British government joined other European governments in condemning the U.S. action. In March 2007, Blair's government introduced a bill that would require the United Kingdom to reduce its greenhouse gas emissions to 60 percent of 1990 levels by 2050. In the meantime, the UK government has announced its plans to abandon the use of coal and has supported calls for the European Union to go carbon neutral by 2050.

The Conservative Party has been in power since 2010, first in a coalition with the Liberal Democrats, then alone, and since 2017 as a minority government. The Conservatives have a mixed record on the environment. They have supported climate policy action at the European level but have shut down numerous environmental commissions (Royal Commission for the Environ-

ment, Sustainable Development Commission) as part of their austerity drive, cut subsidies for **renewable energy**, promoted **nuclear energy**, and supported **fracking**.

Much as in the United States, the green movement in the United Kingdom has had only limited success in forming a Green Party. Influenced by the debates about *The Limits to Growth* and by publications such as “**A Blueprint for Survival**” as well as by predictions of impending doom by writers such as **Paul Ehrlich**, a small group founded the party People in 1973. In 1975, it became known as the **Ecology Party**. At the two 1974 general elections, People presented five and four candidates, respectively. Until 1979, there was little emphasis on electoral activity. In a further attempt to improve on poor electoral results, it was renamed “Green Party” in 1985.

A cornerstone of People was the use of decentralization as a means for addressing the concerns in *The Limits to Growth*. Among the issues that emerged in the late 1970s was the development of nuclear power, which became the focus for the Windscale Enquiry into the development of facilities to process nuclear waste, and the deployment of nuclear weapons, such as in the “dual track” decision by the North Atlantic Treaty Organization (NATO) in 1979 and the decision by the British government to acquire the Trident nuclear submarine as part of its own strategy for deterrence.

People’s founding platform included an emphasis on a sustainable society based on stable **population growth**, a minimum of interference in ecological processes, and more efficient use of energy, with a focus on conservation of resources. Although population is no longer a major theme, the Green Party continues to call for a greening of the economy, clean green energy, safe foods, and peace, justice, and security.

A pivotal concept in both its energy policy and various other policies, including assistance to less developed countries, has been the notion of self-reliance. The 1987 manifesto of the Green Party advocated the creation of a “steady-state, sustainable economy.” Employment policy would focus on job sharing, and there would be general measures such as a **guaranteed minimum income**. There would be a much greater emphasis on the informal sector and small communities and networks. Underlying much of this is the concept of decentralization of government and the economy. In the 2000s, the manifesto of the party was “Real Progress” and the creation of a world that is just, fair, safe, and healthy.

The simple-plurality electoral system in the United Kingdom, often referred to as a “first-past-the-post” system, makes it difficult for minor parties to gain any representation since the candidate with the most votes in a particular constituency is automatically elected, and there is no means for minor parties to have any representation in Parliament unless they can secure a majority of votes in that electorate. The system does not allow for any element of proportional representation. However, at the 1979 general election,

the Ecology Party presented 53 candidates in order to boost its public profile and take advantage of the access to national television that was permitted to parties competing for at least 50 seats. The party attracted on average only 1.5 percent of the vote for the 53 seats; however, it did gain national recognition as a result of the campaign. In the 1983 general elections, the party repeated this tactic, running candidates for 108 seats.

The Ecology Party had competition from another new party, the Liberal/Social Democratic Party Alliance. The alliance attracted many people who were disillusioned with the major parties. To enhance its visibility, the Ecology Party changed its name to the Green Party of England and Wales in 1985. In the 1987 elections, the Green Party received on average 1.4 percent of the vote. In 1990, there was an amicable split of the Green Party into the Green Party of England and Wales, the Scottish Green Party, and the Green Party in Northern Ireland.

In 1989, the party profited from the prominence of issues such as the **greenhouse effect** and the depletion of the **ozone layer**, as well as from disillusionment with the dominant parties to win about 15 percent of the vote in elections to the **European Parliament**. As in many of these elections, the turnout was low (36 percent). Moreover, because of the first-past-the-post electoral system in place at the time, the party did not win any seats. It did not fare well during much of the 1990s, as internal division rocked it, and other parties began to green their own platforms.

A look at the membership of the party over time represents this well. In 1979, the Ecology Party had only 650 members. By 1981, membership had grown to around 6,000, mainly as a result of a deliberate strategy to raise the party's electoral profile and partly because of widespread concern about the development of nuclear power and weapons that began around 1979. Membership of the Green Party of England and Wales peaked around 20,000 in 1990, but dropped to 6,500 in 1992 and 4,500 in 1993. The anti-Iraq War status of the party may have helped revive its membership somewhat. In 2004, membership had risen to approximately 6,300. Membership continued to increase, doubling in 2014 and again in 2015. In September 2015, the Green Party had nearly 66,000 members. The phenomenon was called the "Green Surge" and was in part triggered by broadcasters' plan to exclude the Green Party from their TV debates before the general election. The news spread through social media and led people to come to the support of the Green Party. Green Party popularity is also due to its policies. In the "Vote for Policies" survey before the 2015 general election, 27.4 percent of respondents indicated that they would vote for Green Party policies.

The introduction of proportional voting for the United Kingdom in European parliamentary elections in 1999 has made it easier for the party to increase its visibility there. The Green Party won its first two seats in the European Parliament in 1999. It maintained two seats in the 2004, 2009, and

2014 European Parliament elections. It called for a “people’s poll” to reverse “calamitous Brexit.” With the uncertainty of Brexit hanging over the 2019 European Parliament elections, 11 seats from the UK went to the pro-European Union Greens–European Free Alliance bloc.

The party has achieved some representation at the regional and local levels. From 1992 to 2000, Cynog Dafis was a member of Parliament in the Welsh constituency of Ceredigion Gogledd Penfro, supported by the Welsh nationalist organization Plaid Cymru and the Green Party. In the 2004 local elections, the Green Party won 70 local council seats, and in 2010, the party won its first ever seat in the House of Commons, held by Caroline Lucas; she won the Brighton Pavilion seat. She was reelected to that seat in the 2015 and 2017 general elections. Baroness Jones of Moulsecoomb became the first life peer in the House of Lords from the Green Party in 2013. The Green Party also has two representatives in the London Assembly, as of February 2016.

**UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED).** The UNCED was held in Rio de Janeiro in June 1992. Often referred to as the “Earth Summit,” it was the largest international gathering of this kind, with delegates from 178 countries. It was also seen as the sequel to the **United Nations Conference on the Human Environment (UNCHE)**, which had been held in Stockholm in 1972, bringing together governments, government agencies, and environmental groups to debate environmental questions.

A December 1989 resolution of the United Nations General Assembly made the decision to hold this conference. The choice of Rio de Janeiro as the venue for the conference was important as it gave due recognition to the significance of less developed countries in efforts to address environmental issues. The conference helped spread awareness of global environmental problems, with a particular focus on **climate change**, **biodiversity** loss, and **sustainable development**, but it also highlighted the challenges of making progress on pressing global problems.

A major difficulty for the conference was to reconcile the divergent perspectives of developed and developing countries. The economic implications of environmental protection were a major concern for developing countries. Arguments over who should pay for environmental protection and who should be committed to action dominated negotiations. Developing countries pointed out the “hypocrisy” of developed nations, which consume a disproportionate share of resources and are the largest contributors to greenhouse gas emissions, expecting developing countries to take drastic measures to save the environment. There were also tensions between environmentalists in the developed world pressing for action on climate change and biodiversity

loss and those in developing countries, where priorities were often more strongly linked to poverty alleviation and development as a basis for environmental protection.

A major outcome of the conference was the **United Nations Framework Convention on Climate Change (UNFCCC)**, which is the legal basis upon which years of international climate negotiations have taken place, leading to the **Kyoto Protocol** and the **Paris Agreement**. A second major agreement was the **Convention on Biological Diversity**, which has become the international basis for slowing and eventually stopping the dramatic loss of biodiversity brought about by human activities.

Plans to promote **sustainable development**, outlined in **Agenda 21**, were also agreed upon. This document covered a vast range of topics including international cooperation, combating poverty, consumption patterns, population, the atmosphere, the oceans, indigenous peoples, women, NGOs, technology transfer, education, public awareness, and training, as well as integrated decision making and international institutional arrangements. In an effort to ensure that states devise national plans of action to implement Agenda 21, the United Nations established the **Commission on Sustainable Development (CSD)** in December 1992. The CSD was made responsible for reviewing progress in implementing Agenda 21. All parties to the agreement were required to report their progress to the commission. The CSD was replaced with the High-Level Political Forum on Sustainable Development at the **Rio+20** conference held in Rio de Janeiro in 2012.

Finally, the conference led to the Rio Declaration on Environment and Development and the enactment of Forest Principles, meant to establish global norms and procedures for forest use and protection.

The UNCED also inspired the global green movement. The First Planetary Meeting of Greens was held just prior to the UNCED leading the world's green parties to call on governments to heed the "global state of emergency." The Green International Steering Committee was formed at the conference and met the following year in Mexico City, when it created the first Global Green Network, laying the foundation for the later formation of the **Global Greens**.

**UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT (UNCHE)**. Held from 5 to 16 June 1972 in Stockholm, **Sweden**, UNCHE signaled a significant breakthrough in getting governments, government agencies, and environmental groups together to discuss and recognize the importance of environmental problems. Official delegates from 113 countries took part in the conference. Among the principal themes was how to address pollution problems. On some issues, such as testing nuclear weapons and monitoring the use of toxic chemicals, there was disagreement be-



tween major powers such as the **United States** and other countries. A more popular measure, suggested by the United States, was a moratorium on trading whales lasting 10 years.

One significant outcome of the conference was the focus by less developed countries on the connection between environmental protection and economic development (and their concern about any attempt by industrialized, developed countries to slow the pace of development in poorer countries). This concern contributed to discussion about the possibility of **sustainable development** and a shift in perceptions among many environmental groups in more developed countries toward a more global view of environmental issues and problems. Another long-term outcome was the emergence, following the conference, of many more grassroots nongovernmental environmental groups in less developed nations. This can partly be attributed to the enthusiasm generated by the conference for further action pertaining to the environment and economic development.

The conference also led to further cooperation between nation states. In regard to the establishment of institutional mechanisms and structures to facilitate this cooperation, the formation of the **United Nations Environment Programme (UNEP)** was one of the most visible outcomes of the 1972 conference.

**UNITED NATIONS CONVENTION ON THE LAW OF THE SEA (UNCLOS).** The United Nations has supported three conferences on marine law. The first two were in 1958 and 1960. The third lasted from 1973 to 1982 and took up issues such as the depletion of fish stocks, marine pollution, and the creation of exclusive economic zones for sovereign nations. These efforts led to the Convention of the Law of the Sea, which sets the rights and responsibilities of parties in regard to their use and protection of the world's oceans, including for business, in the environmental field, and in terms of the management of marine natural resources. The convention came into force in 1994. UNCLOS led to the creation of exclusive economic zones stretching out 200 nautical miles from a nation's coastline. However, the effort to declare the oceans a common heritage remains a source of tension between nations. Negotiations toward a convention on conservation and sustainable use of biodiversity beyond national jurisdiction are being held from 2018 to 2020.

**UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP).** This program was established in 1972 following the **United Nations Conference on the Human Environment (UNCHE)**. In order to develop further the cooperation that the conference had achieved between government and nongovernmental organizations (NGOs), the United Nations General Assembly

supported the creation of the Governing Council of UNEP. The council would include representatives from 58 countries. They would be elected by the General Assembly for three-year terms. The primary roles of UNEP were to coordinate and stimulate activities across all agencies of the United Nations.

In 1973, the Governing Council proposed three core objectives for the organization. The first was to increase knowledge, through the interdisciplinary study of ecological systems, “for an integrated and rational management of the resources of the biosphere, and for safeguarding human wellbeing as well as ecosystems.” The second was to “support an integrated approach to the planning and management of development, including that of natural resources,” with an awareness of the effects on the environment and social and economic considerations. The third was to provide assistance, particularly to developing countries, “to help mobilize additional financial resources for the purpose of providing the required technical assistance, education, training and free flow of information and exchange of experience, with a view to promoting the full participation of developing countries in the national and international efforts for the preservation and enhancement of the environment” (from *UNEP: Two Decades of Achievement and Challenge*). In response to the 1972 UNCHE recommendations, UNEP developed three approaches, which were labeled “environmental assessment,” “environmental management,” and “supporting measures.”

UNEP also established mechanisms for collecting and exchanging information. The system came to be known as “Earthwatch.” An important element in this arrangement was the International Referral System (INFOTERRA). INFOTERRA was the most extensive mechanism for information exchange on environmental issues in the world. Approximately 150 countries and 6,500 institutions participated in the system. INFOTERRA also created additional networks for research and information, including the Global Environment Monitoring System, International Register of Potentially Toxic Chemicals, and Global Resource Information Database.

Promoting environmental management, UNEP has contributed to drafting numerous international treaties, such as the 1973 **Convention on International Trade in Endangered Species**, the 1979 Bonn Convention on the Conservation of Migratory Species of Wild Animals, the 1985 **Vienna Convention for the Protection of the Ozone Layer**, the 1987 **Montreal Protocol on Substances That Deplete the Ozone Layer**, the 1992 **United Nations Framework Convention on Climate Change (UNFCCC)**, the 1992 **Convention on Biological Diversity**, the **Kyoto Protocol**, the **Paris Agreement**, and the Minamata Convention on Mercury. Together with the World Meteorological Organization (WMO), UNEP established the **Intergovernmental Panel on Climate Change (IPCC)** in 1988. It is also the implementing agencies for the **Global Environmental Facility (GEF)**. In order to

assist with the management of water resources, it initiated a scheme for the Environmentally Sound Management of Inland Waters, which led to an agreement between eight African countries to monitor the use of the Zambezi River Basin. Another important initiative by UNEP was its Regional Seas Program, which, beginning in the mid-1970s, brought together countries to protect coastlines and oceans around the world. In the 2010s, an important focus was the adoption of the Minamata Convention on Mercury. UNEP has launched many initiatives, such as its Partnership for Action on the Green Economy, the UNEP Finance Initiative, and the UNEP Sustainable Buildings and Climate Initiative. Promoting the effective implementation of the Sustainable Development Goals (SDGs) has been another important area of UNEP activities. In 2015, UNEP created an environmental management system for its operations, to reduce its own environmental footprint by creating a systematic, planned, and documented set of processes.

The success or failure of UNEP's initiatives depends to a large degree on the financial and political support it receives from national governments and the latter's willingness to implement agreements. A large proportion of the objectives that UNEP has set for itself are yet to be realized. However, it has raised awareness about environmental issues among political elites; coordinated action by numerous agencies at the local, national, and international levels; and successfully implemented some of its plans.

**UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC).** The UNFCCC was developed at the **United Nations Conference on Environment and Development (UNCED)**, which was held in Rio de Janeiro in 1992. The UNFCCC expresses concern that "human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth's surface and atmosphere and may adversely affect natural ecosystems and humankind." It does not include specific goals, targets, or timetables but rather a determination "to protect the climate system for present and future generations" and that this should be done on the basis of equity and in recognition of the common but differentiated responsibilities and capabilities of states.

The UNFCCC was opened for signing in May 1992 and came into force beginning in March 1994. Its ultimate objective is to "achieve stabilization of greenhouse gas concentrations in the atmosphere at a low enough level to prevent dangerous anthropogenic interference with the climate system."

The UNFCCC established the Conference of the Parties (COP), the supreme decision-making body of a convention, which takes decisions regarding the effective implementation of the convention. The first COP to the UNFCCC was held in Berlin, **Germany**, in March 1995. The COP presiden-

cy rotates among the five recognized UN regions (Africa, Asia-Pacific, Latin America and the Caribbean, Central and Eastern Europe, and Western Europe and other); the COP venues tend to shift among these groups. The first COP in Berlin decided to prepare a protocol that would create legally binding obligations for developed countries to reduce their greenhouse gas emissions by the time of the third COP, which was to be held in 1997 in Kyoto, **Japan**. Japan agreed to host the third Conference of the Parties in its old capital, Kyoto, and hence the agreement that was formed there has come to be known as the **Kyoto Protocol**.

Under the principal of common but differentiated responsibilities that recognizes the different historical contributions of developed and developing states to global environmental problems, countries that signed the UNFCCC were split into three groups: Annex I, Annex II, and Developing Countries. Annex I countries are the states that were members of the Organization for Economic Cooperation and Development (OECD) in 1992 plus economies in transition. These are the states that are expected under the agreement to take the first steps to reduce their greenhouse gas emissions. Annex II states are the same as those in Annex I minus the countries in transition. They are expected to provide financial and technical assistance to developing countries to reduce their greenhouse gas emissions and adapt to the effects of climate change. Developing countries have no restrictions under the UNFCCC. *See also* GREENHOUSE EFFECT.

**UNITED NATIONS INTERNATIONAL CONFERENCE ON POPULATION AND DEVELOPMENT.** *See* POPULATION GROWTH.

**UNITED STATES CLIMATE ALLIANCE.** The U.S. Climate Alliance is a group of states whose governors have pledged to pursue the goals of the Paris Agreement despite the Trump administration's decision to pull out of this international climate agreement. The alliance was initiated by California, New York, and Washington and has since gained many new adherents. As of April 2019, 23 states had become members. Alliance members commit to implementing policies to further the goals made by the United States when it originally signed the Paris Agreement (reducing greenhouse gas emissions by 26 to 28 percent below 2005 levels by 2025). They agree to track and report their progress to the global community and to accelerate policies to reduce carbon pollution and to promote clean energy deployment.

**UNITED STATES OF AMERICA.** The United States has one of the world's largest environmental movements, but green parties have done less well than in many European states. While there may be a cultural element to this, the nature of the winner-take-all electoral systems at the federal and state levels has also played a major role.

While a few of the best-known environmental groups in the United States emerged in the first half of the 20th century, including the **Sierra Club** (1892) and **National Audubon Society** (1905), many formed in the years after the end of World War II, including Defenders of Wildlife (1947), the **Nature Conservancy** (1951), Resources for the Future (1952), and the **World Wide Fund for Nature (WWF)** in (1961).

These environmental groups began to lobby Congress for preservation of more wilderness areas and protection of wildlife. Howard Zahniser, a staffer at the U.S. Biological Survey, became director of the **Wilderness Society**. He believed environmental organizations could more effectively further their cause by forming coalitions lobbying for similar goals. After **David Brower** became director of the Sierra Club, Zahniser and Brower lobbied together to have Congress designate 50 million acres in the West as wilderness. In 1956, these environmental movements also defeated government plans to build dams in the Grand Canyon (Arizona) and Echo Park, in the Dinosaur National Monument (Colorado). They successfully lobbied for the passage of the Wilderness Act of 1964, which set aside pristine forests for preservation. Environmental groups also successfully lobbied for the passage of the Land and Water Conservation Fund Act of 1964 to fund federal purchases of land for protection, the Endangered Species Act of 1966, and the Wild and Scenic Rivers Act of 1968 to protect rivers of special character.

Concern also began to grow about the impacts that rapid industrialization and modernization were having on the Earth and living species. A series of publications began to change public attitudes about environmental protection. In 1948, Fairfield Osborne published one of the first books to be a wake-up call related to agricultural practices, *Our Plundered Planet*. **Rachel Carson**'s groundbreaking 1962 book *Silent Spring*, which warned that unbridled use of pesticides was killing off insects and birds and thus the basis of many ecosystems, became a national best seller in countries around the world.

A series of tragic accidents that shocked the public further expanded the green movement. In 1969 an explosion on an oil platform off the coast of Santa Barbara created a huge oil slick that affected 35 miles of California coastline, killing marine life and birds. The same year, the Cuyahoga River in Ohio, which was contaminated with chemicals, caught fire. New environmental groups began to form, and existing environmental groups expanded their range of activities. The environmental movement became part of a larger counterculture movement that included supporters of the peace move-

ment against the Vietnam War, the civil rights movement, and the women's rights movement. Gus Speth, creator of the **Natural Resources Defense Council (NRDC)** (1970), one of the most powerful groups regularly involved in environmental litigation in the country, stated that he was inspired to create an organization lobbying and conducting lawsuits on behalf of the environment by the example of the National Association for the Advancement of Colored People.

Other new groups to form at this time included the **Environmental Defense Fund** (1967), **Friends of the Earth** (1969), and **Greenpeace USA** (1971). The focus of the environmental movement broadened to include not only nature conservation and wildlife preservation, but also air and water pollution, **nuclear energy**, chemical use, incinerators, toxic landfills, and many other issues. It is important to note that while these groups are national, they often are major actors in local environmental cases that may have national ramifications.

These environmental groups became powerful political actors, making use of the federal government system to lobby policy makers at multiple levels. Environmental activists were empowered in the 1970s by Congress and the courts. The Administrative Procedures Act of 1946 had already provided citizens with some avenues to learn about, and be involved in, decision making related to development, environment, and other issues. The environmental groups' ability to influence regulatory direction expanded substantially, first with the passage of the National Environmental Policy Act (NEPA) in 1969 and then with the Supreme Court's ruling in the 1972 "Mineral King" case (*Sierra Club v. Morton*) brought by the Sierra Club. The NEPA is one of the most important pieces of environmental legislation in the United States. It requires that environmental-impact assessments be conducted for all major federal projects. It also includes provisions for citizen suits and transparency in decision making on environmental matters, provisions that were included in many subsequent pieces of environmental legislation as well. The Sierra Club lost the Mineral King case, but in its ruling, the Supreme Court expanded its interpretation of the concept of "standing to sue," indicating that if an organization is able to show that its members would be affected by an action, even if not directly injured by the action, they could have standing to sue.

Based on this enabling legislation, environmental organizations undertook suits to compel administrative and corporate improvements. Key U.S. environmental organizations, such as the NRDC and Environmental Defense Fund (EDF), were created to undertake NEPA cases in order to preserve local areas. In the process, they became strong national-level players that were able to transfer their concerns to other locales facing destructive development. U.S. environmental groups used these provisions to sue violators of environmental laws and government agencies that were not performing du-

ties required of them by the law. The federal courts, in turn, became very active in reviewing executive actions on environmental policy and not infrequently requiring federal agencies and states to adopt new regulations.

Memberships in environmental nongovernmental organizations (NGOs) have gone up during administrations that have actively pursued a neoconservative economic agenda at the expense of the environment. Thus, both during the Ronald Reagan presidency and the George W. Bush presidency, environmental groups were able to attract new members. This trend has continued with the Donald Trump administration. The Trump administration has led an assault on environmental policies and programs unprecedented in U.S. history. This has included efforts to ease restrictions on mining and oil drilling in federal lands, rolling back Obama-era policies addressing climate change, weakening automobile fuel-efficiency standards, attacking environmental science, promoting the Keystone XL pipeline, and increasing logging on public lands. The Trump administration has also been weak on enforcing environmental regulations. Under President Trump, the EPA has seen considerable setbacks and cuts. This has led to the outrage of U.S. citizens and the increase in donations to various NGOs.

As was the case in Europe, Australia, and New Zealand, some activists also turned to the political system to seek change. The **Citizens Party** was the first large-scale attempt by social movements in the United States to run in elections on a platform that combined a focus on environmental questions and socialist ideas for restructuring the economy; green political activists became even more convinced of the value of focusing on local politics.

A group of activists founded the Green Movement Committee in May 1984 and planned a bigger meeting following their initiative. Three months later, about 60 activists gathered in Macalister College in Minneapolis to form the Committees of Correspondence, named after the small grassroots groups of the U.S. Revolutionary War. They also adopted the Green Ten Key Values. Although the committees wanted to achieve a degree of coordination and coherence at the national level, they differed from the Citizens Party by focusing principally on local political campaigns and shedding the preoccupation with left-wing agendas. While this to some degree weakened any efforts to develop broad platforms for political campaigns, it did create new opportunities for local and regional green parties to emerge throughout the United States over the following years.

Greens in California, for example, met in the San Francisco Bay area in late 1984 and 1985, leading to the founding of the East Bay Green Alliance. Other groups began to form around California, giving birth to the idea of holding a large “greening the West” gathering. Over 1,000 people attended the meeting, which was held in the fall of 1988. The following year, the California greens held their first statewide conference, with 25 attendees. In 1990, about 60 delegates from 30 local green groups decided to start a state-

level party. They achieved ballot status for the first time in 1992, meaning that they obtained the required 78,992 registrants. They took advantage of Earth Day gatherings and anti-Gulf War protests to gain ballot status. The party elected its first green member to the city council of Arcata, a city north of San Francisco near the Oregon border.

In 1990, the national Green Party Organizing Committee was formed. The committee renamed itself “Greens/Green Party USA” (G/GPUSA) in 1991. In 1996, Ralph Nader ran as the first green presidential candidate in the United States, winning nearly 700,000 votes. Following the presidential campaign, the Association of State Green Parties was formed. In 2001, the Green Party of the United States, a federation of the state green parties, was established. Decisions for the party are made through a national committee made up of accredited state green parties. The primary goal of the party is to aid in the development of green parties in all 50 states and the District of Columbia.

One major challenge for the green party is ballot-access rules for elections. In the United States, each state sets the rules determining which candidates can appear on ballots. The rules can make it hard, especially for minor parties, to get on the ballot. The green party was on the ballot in 20 states in 2015.

In 1985, there were three candidates running nationwide, but no electoral successes. By the early 1990s, green parties had secured numerous seats on local councils and boards of education. In the 1992 elections, the greens secured 20 seats at the municipal and county levels, representing a win-loss ratio of about 1 in 5. In 2002, they won 80 of the 260 municipal and county elections in which they had a candidate. In the 2004 elections, a presidential election year, there were 436 candidates running in 42 states. They won 71 seats. In 2006, the party had 71 victories out of 386 races. Ten years later, in 2016, the party was doing less well, winning only about 1 in every 8 contests. They had 39 victories while participating in 304 races. For the 2017 election, the Green Party was on the ballot in 45 states and qualified for write-in status in 3 states, driven by citizen petitions. As of 2017, there were 136 green officials elected mostly at the municipal level. In the 2018 elections, the party participated in 285 races, in 36 states with 21 victories, meaning about 1 win in 14 contests. Victories were primarily at the level of school boards, school board trustees, community services (district), library boards, and other similar city, town, and district positions. The highest posts achieved in 2018 were two mayoral positions in California. California is where the Green Party does best, probably due to its size but also its relatively green electorate.

There have been several particularly noteworthy wins in the United States. In 1999, Audie Bock became the first Green Party candidate elected to the California State Assembly (she subsequently lost her seat and also switched party affiliation back to her original Democratic affiliation). In the 2002 and



2004 elections, John Eder was elected to the State House of Representatives in Maine as a Green Independent, the Maine affiliate of the Green Party. In the 2006 elections, the Green Party achieved its first-ever directly elected mayor when Gayle McLaughlin defeated the incumbent mayor of Richmond, California. She was reelected in 2010. Due to term limits, she did not run again as mayor, but in 2014 she ran successfully for city council. She ran unsuccessfully for lieutenant governor in 2018 as an independent backed by the Green Party, Our Revolution, and the Peace and Freedom Party.

Ralph Nader ran in the 2000 presidential election as the Green Party candidate and gained 2.7 percent of the vote. Although the result of the 2000 campaign was regarded as the biggest success for the Green Party, there was criticism from progressives that Nader's running contributed to the loss of Democratic presidential candidate Albert Gore.

In the 2012 and 2016 presidential elections, Jill Stein was nominated as the Green Party candidate. She received about 450,000 votes in the 2012 election and 1.2 million votes (about 1 percent) in the 2016 election. Stein may have taken votes away from Hillary Clinton, although the Green Party vehemently opposes the idea that Clinton's loss was its responsibility. The Green Party has made some inroads into local-level politics.

Despite the diversity of green parties and their focus on local concerns, some consensus on basic principles, which have been adopted from the platforms of European green parties like **Bündnis 90/Die Grünen**, has emerged. Apart from the core principles noted earlier, basic principles include a focus on decentralization, feminism, respect for diversity, stewardship, the needs of future generations, and ecologically sustainable lifestyles. There is strong emphasis on organizing the economy and social services on a community basis and for much greater sharing of ownership and control than is presently the case.

Green parties in the United States have also adopted ideas about fully taking into account, through taxation and other means, environmental and social costs of pollution and energy and other resource use. They also call for a reform of the electoral system, particularly the introduction of proportional representation, to enable more parties to compete effectively in elections. *See also* "A BLUEPRINT FOR SURVIVAL"; CLIMATE SKEPTICS; CONSERVATIONISM; ENVIRONMENTAL JUSTICE; LOVE CANAL; NATIONAL PARKS; POLLUTER PAYS PRINCIPLE; RENEWABLE ENERGY; TEA PARTY; THREE MILE ISLAND.

**UNITED TASMANIA GROUP (UTG).** The United Tasmania Group is considered the world's first green political party. It was formed in March 1972 as a direct response to the failure by traditional political parties to consider the full implications of the destruction of Tasmania's Lake Pedder that would be caused by the building of a hydroelectric facility. The UTG

was formed by the Lake Pedder Action Committee and was the first political organization in Australian history to adopt a new politics platform. In the 1972 state elections, it came close to winning a seat in the Tasmanian Parliament after running in four seats and polling at about 7 percent of the vote. Some commentators regard the UTG and the **Values Party** (formed in 1972 in **New Zealand**) as the first green parties. The UTG (and the Values Party) combined opposition to industrial development with some of the preoccupations of social movements from the 1960s, such as the need for political reform and social change.

The manifesto of the UTG represented some of the central tenets of the alternative environmental paradigm described by Stephen Cotgrove in *Catastrophe or Cornucopia* and the postmaterialist values identified by Ronald Inglehart in *The Silent Revolution*. The UTG espoused a “new ethic” that condemned “the misuse of power for individual or group prominence based on aggression against man or nature.” It advocated an aesthetic and harmonious relationship between human beings and nature and undertook to create new institutions that were based on participatory democracy, justice, and equal opportunity.

Although the UTG participated in nine electoral contests between 1972 and 1976, it failed to gain any seats and by 1977 began to decline as a political organization. In its place emerged a new organization, the Tasmanian **Wilderness Society**, which provided a structure for mobilizing protesters, especially against development projects such as the **Franklin Dam**. The UTG had served as a vehicle for training a new generation of political activists who were to wage highly successful campaigns and influence environmental policy making and new political organizations in Tasmania and in **Australia**. See also DIRECT DEMOCRACY; POSTMATERIALISM.

**URBAN GARDENING/FARMING.** Cultivating small plots of privately owned land (allotment gardens) or in public spaces (community gardens) within urban areas has become increasingly popular.

Allotments became common in the 19th century in Europe mainly as a response to food shortages in cities, especially during years of famine or crisis. Today, allotments are recognized as providing various social and ecological functions in urban areas. They maintain and transfer knowledge about food and agriculture, support local ecosystems, and provide areas of rest and escape.

Community gardens are rooted in the civic and environmental struggles of the 1960s and 1970s. They developed during the 1980s with environmental activists demanding more green spaces in cities in industrialized countries. They share values with environmental-justice and equity movements.

Community gardens serve diverse purposes and people. They may have a functional purpose, such as growing food, or a leisure purpose, such as hobby gardening. They may be educational tools for communities, be community-building or support tools, contribute to the pursuit of a more healthy lifestyle, or even play a role in reducing violence in a neighborhood.

Urban gardening has gained more attention in recent years as cities seek ways to become greener and to provide options for more locally grown food. In many cases, municipalities support urban gardening, either by approval of public-space use for gardening or through professional assistance and allocation of resources.

Urban gardening can contribute as an important vehicle for civic participation in local governance. A more extreme version of urban gardening—“critical urban gardening” or “guerilla urban gardening”—involves gardening without “permission” of “hegemonic” entities, whether municipal governments or capitalist landowners. This is an act of defiance against authority and a political act to mobilize people to take decisions into their own hands in order to promote alternative views to the environment.

**URUGUAY.** A relatively well-off country in South America, Uruguay has essentially no domestic sources of fossil fuels, although it has relatively good hydropower potential. Uruguay has become a leader in the development of **renewable energy** in South America. The growth of renewable energy, and especially wind power, in Uruguay since the late 2000s has been impressive. In 2007, the Uruguayan government started the Uruguay Wind Energy Programme with funds from the Global Environment Facility and its own national budget. The main purpose of this program is to enhance energy security by complementing the country’s hydropower capacity. Policy support has consisted of fiscal incentives (tax credits), a competitive bidding mechanism (auctions), net metering, and human resource training. Hydropower contributes to about two-thirds of electricity production. Wind power contributed an additional 33 percent of electricity generation in 2017. This means that now almost 100 percent of the country’s electricity is generated from renewable sources including hydropower, wind, solar, and biomass. The government aims to be carbon neutral by 2030.

The Green Eto-Ecologist Party (Partido Verde Eto-Ecologista) was established in 1987, but in 2009, with little voter support, aligned itself with the Civic Union. The Partido Ecologista Radical Intransigente (the Ecologist Radical Intransigent Party) was established in 2013, and its candidates participated in primary elections. It has no representatives in the General Assembly.



# V

**VALUES PARTY.** *See* NEW ZEALAND.

**VALUING THE ENVIRONMENT.** Discussions about **sustainable development** have led to numerous efforts to place a value on the environment, through the introduction of measures such as **pollution charges** and carbon taxes, and reconceptualizing or challenging economic beliefs in the power of the dominant economic measure, **gross national product (GNP)**.

One of the strongest efforts to bring about a change in perceptions and policies came under Chris Patten, the British minister for the environment in the 1989 Conservative government led by Margaret Thatcher. Patten appointed as his advisers a team led by Professor David Pearce. Their *Blueprint for a Green Economy* outlined a range of specific measures for achieving sustainable development by placing values on the environment. Their work also drew together many other economists' suggestions about how to deal with the protection of the commons, such as water and the atmosphere, that have no price attached to them.

Pearce and his collaborators proposed the introduction of market-based incentives, such as pollution charges and carbon taxes, for changing behavior toward the environment. The idea of market-based instruments has developed into various forms, such as payments for ecosystem services (PES), the economics of ecosystems and biodiversity (TEEB), and the emissions trading system (ETS). *See also* TRAGEDY OF THE COMMONS.

**VEGETARIANISM.** Vegetarians are individuals who abstain from eating meat, poultry, and fish. Vegans neither eat nor use animal products, including dairy products, eggs, honey, or leather. The reasons for becoming a vegetarian or vegan vary from person to person. In relation to green movements, vegetarianism is linked to animal rights and the environmental impacts of particularly large-scale animal farming.

The report *Meat Atlas* published by the Heinrich Böll Foundation and **Friends of the Earth** Europe explains the environmental effects of eating meat. Livestock production is growing worldwide alongside **population**

**growth** and diet changes. Highly industrialized animal farming results in poor conditions for the animals, as well as for slaughterhouse workers and farmers. Furthermore, the livestock industry consumes vast amounts of fresh water, contributes to deforestation and **biodiversity loss**, and emits significant amounts of greenhouse gases. According to the Food and Agriculture Organization of the United Nations (FAO), livestock accounts for 14.5 percent of global greenhouse gas emissions.

For these reasons, many environmental groups and green parties are campaigning for reduced meat consumption. The German green party, Bündnis 90/Die Grünen, proposed the creation of a once-a-week “veggie day” in public eating places as part of its election campaign in 2013. However, the campaign flopped, suggesting that in at least some countries, changing eating behaviors will require longer and more effective campaigns. The Green Party of England and Wales has a policy to ensure that high quality, nutritionally balanced vegetarian and vegan menu options are widely available and promoted in all public-sector establishments such as schools, hospitals, and care facilities. *See also* ANIMAL RIGHTS.

**VIENNA CONVENTION FOR THE PROTECTION OF THE OZONE LAYER.** A 1985 meeting organized at the behest of concerned scientists led to the formation of the Vienna Convention for the Protection of the Ozone Layer and governmental recognition of the need to act to protect the stratospheric **ozone layer**, critical to the protection of humans, plants, and animals from ultraviolet radiation. Ozone was first discovered in the Earth’s stratosphere around 1880. The Vienna Convention was followed two years later by the establishment of the **Montreal Protocol on Substances That Deplete the Ozone Layer**, often considered the world’s most successful global environmental agreement. In 1985, the year the convention was opened for signature, the British Antarctic Survey presented new scientific evidence on the serious loss of stratospheric ozone over the Antarctic, commonly known as the “ozone hole.”

**VIETNAM, SOCIALIST REPUBLIC OF.** Vietnam has undergone rapid economic growth since the *doi moi* economic reforms of the 1980s began, which liberalized economic policies and created something resembling a market economy within the communist state. The country’s development has resulted in environmental damage and resource management issues that compound the severe ecological destruction that resulted from the Vietnam War, including the widespread use of napalm and Agent Orange.

The Vietnamese government monitors the activities of international and local nongovernmental organizations (NGOs). The Communist Party of Vietnam, which controls the government, requires registration of all local

and international NGOs and institutions. The party monitors these organizations and only permits them to engage in certain activities, such as providing community assistance. Many international NGOs work in Vietnam despite the strict government monitoring. Among these are the **International Union for the Conservation of Nature (IUCN)**, **World Wide Fund for Nature (WWF)**, and Care International. The Asia Foundation has supported Vietnamese partners in research on **climate change** and for environmental protection.

WildAct Vietnam, a member of Rhino Alliance, works on environmental education in Vietnam. The Vietnam Association for Conservation of Nature and Environment organizes youth activities for the environment and supports programs to introduce society to environment-friendly products. Education for Nature, Vietnam, has run media campaigns. The Center for Green Globe engages in tree planting. Although Vietnamese NGOs are not independent in terms of legal status, there are many NGOs working independently from the government. Since 2007, a number of Vietnamese NGOs and bloggers have opposed the government's plan for bauxite mining in the Central Highlands. Local NGOs such as Consultancy on Development Institute (CODE) and PanNature have acted as advocacy groups against bauxite exploitation.





# W

**WARD, BARBARA (1914–1982).** Barbara Ward coauthored, with Rene Dubos, the highly influential book *Only One Earth*. This publication contained a powerful critique of advanced industrialized market economies and influenced the environmental-policy agenda of the United Nations, which had commissioned the work. In 1968, Ward was appointed Schweitzer Professor of International Economic Development at Columbia University and, in 1973, to the presidency of the International Institute for Environment and Development.

**WESTERN BALKANS.** The Western Balkans includes the southeast European countries of Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Macedonia, and Albania. After the end of the Cold War, these countries were preoccupied with political and economic transformation and the introduction of democracy. During the period of transition, environmental issues were largely ignored. The conflicts in the region in the 1990s and the NATO bombing of Serbia in 1999, moreover, did serious damage to the regional environment. Industrialization of the region resumed after the wars ended, and pollution levels and environmental degradation significantly increased. A legacy of environmental problems afflicts the region. According to a 2009 UNDP report (the Western Balkans Environmental Programme: Review of Policy Integration and Capacity Development Need Assessment Studies), a combination of financial, administrative, and legal factors contributed to the environmental degradation of the region.

Environmental movements in the Western Balkans emerged during the 1960s, primarily in the form of nature lovers who organized social events in nature. During the 1970 and 1980s, these movements developed into associations of ecologists, who mainly focused on ecological education, research, and promoting environmental values. During the 1990s, the political, economic, and social transformation of the Western Balkan countries demanded a significant reorganization of legal and institutional frameworks. With the introduction of democracy, environmentalists could register civil-society or-

ganizations (CSOs) and associations. During this period, the newly created civil-society organizations mainly dealt with humanitarian-aid issues, fostering peace, and promoting human rights.

The EU integration process has been a powerful driving force for change and has provided opportunities for strengthening the civil-society sector, including environmental CSOs. The main focus has been on harmonizing their legislation with that of the EU, and in this way elevating their environmental laws and standards in one swift process. Today, in all of the Western Balkan countries, legal frameworks regarding civil society are in place, guaranteeing CSOs their right to operate as independent organizations through advocacy, lobbying, and policy dialogue. In most cases, this includes provision of financial support, which enables CSOs to operate as nonprofit organizations. However, the effectiveness of environmental-CSO actions remains low for several reasons: limited government capacities for engaging civil society in policy-making processes, a low level of understanding within government circles of participatory democracy, a tendency to favor short-term economic gains over the longer-term benefits of **sustainable development**, and a low level of awareness of environmental issues among the local populations. Most of the environmental actions in the Western Balkans remain largely dependent on financial support from international organizations and foreign donors. International organizations also play an important role in providing expertise and political power to local CSOs in their fight against government megaprojects that have significant negative impacts on the environment.

**WILDERNESS SOCIETY.** The power of social movements such as those concerned with the environment lies partly in their ability to mobilize people. By organizing popular protests, environmental groups have influenced political processes and parliamentary politics in Australia. Campaigns such as the one by the Tasmanian Wilderness Society against flooding from the Franklin and lower Gordon rivers contributed to a rapid rise in the membership of this organization. By 1983, the society had 7,332 members and, reflecting its national appeal, changed its name to the Wilderness Society. Branches were formed in all states, and campaigns for the preservation of forests were being conducted across **Australia**.

The radicalism of the Wilderness Society signaled the entry of a new generation of environmentalists on the political scene. The organization's involvement (1979–1983) in the campaign against the **Franklin Dam** became a watershed movement and made the Wilderness Society a national force in the Australian environmental movement. Since then, the Wilderness Society has been actively engaged in campaigning on various conservation issues, including mining on the Mitchell Plateau, an area of rare and endemic animal species. Their efforts have contributed to a decision by Alcoa and Rio

Tinte to give up mining leases for this area so it can be included in a proposed new national park in the Kimberley, to be Australia's largest. Other efforts include, for example, protecting the Great Australian Bight, including the waters near Kangaroo Island, from deep-sea oil drilling and protecting the Painted Desert from coal mining.

The Wilderness Society was one of several environmental groups invited by the Australian government to participate in discussion groups on ecologically **sustainable development**. However, the association has always expressed concern about the predominance of economic interests in these gatherings. The Wilderness Society has been sharp in its criticism of any attempt by the government to initiate development projects in forests. The rise in support for the Wilderness Society has contributed to a stronger focus by traditional political organizations on environmental issues. *See also* FRANK-LIN DAM.

**WILDERNESS SOCIETY (UNITED STATES).** Set up in 1935, the Wilderness Society works for the conservation of land in the **United States** and for related values such as **biodiversity** and clean air and water. It has led the effort to protect nearly 110 million acres of wilderness in 44 states. Its policy work focuses on several areas, including wilderness designation, monument designation, national forests, public lands, oil and gas, and conservation funding. The Wilderness Society played a pivotal role in the passage of the Wilderness Act of 1964. It has a membership of almost a million. The Wilderness Society, like many other green groups in the United States, has turned to the web for advocacy campaigning on issues such as preservation of open spaces, stopping oil and gas pipelines, and protecting national forests.

**WOMEN'S EARTH ALLIANCE.** This organization, which grew out of the Women's Global Green Action Network, was established in 2005 at the 13th session of the United Nations Commission for Sustainable Development in New York. The alliance aims to empower and unite grassroots women advocates, entrepreneurs, and community leaders around the world working on environmental, economic, and social sustainability and justice issues.

**WOMEN'S ENVIRONMENTAL NETWORK.** This is a London-based organization founded in 1988 that represents women and campaigns on issues that link women, the environment, and health. The Women's Environmental Network seeks to educate, inform, and empower women and men who care about the environment, and to enable people to use their consumer power as a force for environmental change.

**WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT (WCED).** The World Commission on Environment and Development was formed following a September 1983 resolution by the United Nations General Assembly to explore further the connection between environmental protection and economic development. Former Norwegian prime minister **Gro Harlem Brundtland** chaired the WCED. The 23-member commission included 12 representatives from less developed nations, 7 from Western developed countries, and 4 from communist countries. Work by the commission focused on the following topics: **population growth** and human resources, food security, **biodiversity**, energy and industry, urbanization, the international economy, peace and security, and, above all, forms of cooperation among national governments for addressing these issues. It then provided backing for a large number of studies on these topics and arranged meetings in 10 countries to elicit the views of a wide range of individuals and organizations.

The outcome of these extensive deliberations was the 1987 publication *Our Common Future*. The report pointed out that prevailing institutional mechanisms centered on local, regional, and national governments were inadequate to deal with the serious problems of **acid rain**, the **greenhouse effect**, and depletion of the **ozone layer**. The commission felt that environmental protection and economic development had to be viewed as interdependent rather than conflicting principles. To convey this point of view, it used the term *sustainable development*.

*Our Common Future* became a key source for deliberations by established organizations that were under pressure to adapt to new challenges from the rising green movement. The WCED defined sustainable development as meeting “the needs of the present without compromising the ability of future generations to meet their own needs.”

In many countries, this report was also taken as a useful basis for developing a dialogue between environmentalists and developers. The WCED provided a comprehensive statement on how to address both environmental and economic concerns and how all organizations should strive to incorporate ecological wisdom into their economic and social decisions. The report attempted to demonstrate that emphasis on materialism and economic growth will not necessarily damage the environment if they are guided by principles of **ecology** and preoccupied with the renewability of resources. Economic growth was seen as “absolutely essential in order to relieve the great poverty that is deepening in much of the developing world.”

The final chapter of the report made a number of proposals for “institutional and legal change.” They included the incorporation of sustainable development as a term of reference for the principal agencies of national governments; the creation of national environmental protection and natural resources management agencies; the strengthening, through increased fund-

ing, of the **United Nations Environmental Programme (UNEP)**; a greater focus on global environmental assessment and reporting; strengthening international cooperation, broadening and intensifying the contribution to sustainable development by the scientific community and nongovernmental organizations (NGOs); greater cooperation with industry groups; strengthening and extending existing international conventions and agreements; and drafting and implementing a universal declaration and a convention on environmental protection and sustainable development. *See also THE LIMITS TO GROWTH.*

**WORLD CONSERVATION STRATEGY.** The World Conservation Strategy was initiated by the **International Union for the Conservation of Nature (IUCN)**. The strategy focused on how to identify and deal with threats to species and ecosystems and the preservation of genetic diversity for the purposes of agricultural development. The project was formulated in conjunction with the **United Nations Environment Programme (UNEP)** and the **World Wildlife Fund (WWF)**. The publication of *World Conservation Strategy: Living Resource for Sustainable Development* in 1980 provided a major impetus to arguments about sustainable development. The report recommended the development of national strategies for conservation with the aim of integrating conservation and development.

**WORLD HERITAGE.** The United Nations Educational, Scientific and Cultural Organization (UNESCO) adopted the Convention Concerning the Protection of the World Cultural and Natural Heritage in 1972. The goal is to convince the 191 signatory state parties to preserve their cultural and natural heritage by designating places with an outstanding universal value as World Heritage Sites. As of August 2017, there are 1,073 sites inscribed in the World Heritage List, of which 832 are cultural, 206 are natural, and 35 are mixed sites.

**WORLD RESOURCES INSTITUTE (WRI).** Launched in 1985 with the support of the John D. and Katherine T. MacArthur Foundation, the WRI is an environmental think tank researching and providing policy solutions in the fields of people and ecosystems, **climate change**, and markets and enterprise. As of 2017, 700 experts and staff are working at WRI. It has offices in **Brazil, China, Europe, India, Indonesia, and the United States**. WRI also pursues public access to information and promotes environmental and natural resources protection.

**WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT.** The Johannesburg “Earth Summit” was held in South Africa from 26 August to 4 September 2002. It was a sequel to the **United Nations Conference on Environment and Development (UNCED)** that took place in Rio de Janeiro in June 1992. U.S. president George Bush bowed to conservative lawmakers who urged him to boycott the summit, sending Secretary of State Colin Powell to lead the U.S. delegation in his stead. Representatives of over 190 countries attended the Summit on Sustainable Development. It is also commonly known as “Rio+10.”

One of the most important aspects of this conference was the discussion on the findings of the **Commission on Sustainable Development (CSD)**, which was formed in 1992 to monitor the plans initiated by the UNCED to monitor the financial and technical resources for sustainable-development projects given to developing nations. The summit also provided an opportunity to review the progress made toward implementing **Agenda 21** and to assess the World Bank and World Trade Organization operations in terms of **sustainable development** goals.

Attendees to the conference almost universally agreed that the implementation of sustainable development had suffered since 1992, with a widening poverty gap between the north and the south and further environmental degradation. This led to the **Millennium Development Goals**, which included among many other issues halving the number of people living in extreme poverty, decreasing the proportion of people without basic sanitation or access to safe drinking water, and maintaining and restoring depleted fish stocks by 2015. The World Summit was used to advance the idea of public-private partnerships for sustainable development. For example, the **World Resources Institute** announced a partnership initiative that aimed at supporting credible decision making for the Millennium Development Goals. Eight countries and the World Bank backed this initiative. *See also* SUSTAINABLE DEVELOPMENT GOALS (SDGs).

**WORLDWATCH INSTITUTE.** This independent research organization, founded by Lester Brown in 1974, works for an environmentally sustainable and socially just society. Worldwatch Institute is best known for its annual publication, *The State of the World*, that covers selected sustainability topics, including urban development, climate change, global security, consumerism, and agricultural innovation. The 2017 publication *EarthEd* examines innovative education approaches to teaching and learning in a world rapidly changing in the era of the anthropocene. Worldwatch Institute has projects in the fields of climate and environment, food and agriculture, and environment and society.

**WORLD WIDE FUND FOR NATURE (WWF).** Known as the “World Wide Fund for Nature” in much of the world, the WWF is called the **World Wildlife Fund (WWF)** in the **United States** and **Canada**. Eminent British ornithologist Julian Huxley provided the stimulus to the formation of the WWF, which is now one of the largest conservation organizations in the world, after a visit he made to East Africa in 1960. Huxley wrote three articles in *The Observer* weekly magazine in which he disclosed his concerns about the destruction of wildlife caused by agricultural practices and poaching. In collaboration with Max Nicholson, the director general of the Nature Conservancy Council in the **United Kingdom**, Huxley brought together a group of well-known scientists, including ornithologist Peter Scott, who was vice president of the **International Union for the Conservation of Nature (IUCN)**, to establish an international fundraising organization for nature conservation. To emphasize the independence of the new organization, its headquarters was established in **Switzerland**, whose reputation was as a neutral country in international affairs.

Officially founded on 11 September 1961, the WWF aimed to establish offices in as many countries as possible to facilitate fundraising and oversee various projects. The objective was to cooperate with nongovernmental organizations (NGOs) such as the IUCN, the International Council for Bird Preservation (later named Birdlife International), the International Waterfowl Research Bureau, and International Youth Federation for the Study and Conservation of Nature.

Assisted by dignitaries such as the Duke of Edinburgh, the WWF rapidly succeeded in raising large sums of money: within three years it had secured about US\$1.9 million to support conservation projects all over the world, including **India**, **Kenya**, and the Galapagos Islands. The WWF also excelled in promoting itself, notably through the use of its black and white panda logo. The WWF has about one million supporters in the United States and nearly five million supporters worldwide. The WWF has invested more than US\$1 billion in more than 12,000 projects in over 100 countries.

The WWF lobbies governments on conservation issues and has been successful in bringing about significant changes in conservation policy. From its inception, the WWF has persuaded governments to establish and protect **national parks** and conservation areas. In the 1970s, it was instrumental in assisting the Indian government to establish reserves for tigers. It launched campaigns to protect tropical rainforests and create sanctuaries for whales, dolphins, and seals. It also contributed to the effective operation of the Trade Records Analysis of Fauna and Flora in Commerce, an organization that drew attention to the trade in wildlife and wildlife products, notably ivory and rhino horn, and worked to protect species from extinction. The WWF has

also cooperated in initiatives such as the **World Conservation Strategy**, launched by the IUCN and the **United Nations Environmental Programme (UNEP)**.

Throughout its existence, the WWF has been highly innovative in raising funds. In 1970, the president of WWF International, Prince Bernhard of the Netherlands, initiated the 1001 Fund, which in effect asked 1,001 individuals to contribute US\$10,000 each and thereby raise US\$10 million. In 1979 the “Save the Rhino” campaign raised US\$1 million. In 1983, the WWF came up with the idea of persuading postal organizations in over 130 countries to depict threatened species on postage stamps, an initiative that by the early 1990s had raised another US\$10 million. The WWF also organized agreements between less developed and wealthy nations so that instead of repaying part of their national debt to the developed nations, the emerging nations spent an agreed-upon sum on conservation measures, so-called **debt-for-nature swaps**. In 2016, in collaboration with Apple, Inc., it launched Apps for Earth, generating over \$8 million in revenue and raising awareness.

In order to make known its commitment to addressing a wide range of environmental issues, the organization changed its name from World Wildlife Fund to the World Wide Fund for Nature in 1986, though in **Canada** and the **United States** it kept the original name.

In its mission statement for the 1990s, the WWF set out three goals: preservation of biological diversity, particularly the preservation of tropical forests, wetlands, coasts, and coral reefs; sustainable use of natural resources, with a view both to improving the **quality of life** for human beings and preserving the foundations for the regeneration of resources; and reducing pollution and waste. In the 2000s, the focus of the work expanded to include slowing **climate change** and reducing toxins in the environment while continuing to work on protecting oceans and fresh waters, stopping deforestation, and saving species. In 2007, the WWF initiated **Earth Hour** in which people switch off lights for an hour to show their support for climate protection in Sydney, Australia. The demonstration spread across the world as the largest demonstration for action on climate change, and every year more countries are participating in the event. It has raised funds for conservation initiatives in regions around the world, including the **Amazon** in **Brazil** and rainforests in Sumatra. In 2015, it led a petition drive to protest the slaughtering of elephants, gaining over one million signatures. *See also* AFRICAN WILDLIFE; BIODIVERSITY.

**WORLD WILDLIFE FUND (WWF)**. *See* WORLD WIDE FUND FOR NATURE (WWF).



# Y

**YASUNI NATIONAL PARK.** Situated in the Ecuadorian Amazon, Yasuni National Park is one of the most biodiverse places on the planet. During the Pleistocene, between 1.8 million and 11,700 years ago, the area was not covered by glaciers or ice; hence, it preserved various kinds of flora and fauna that survived and repopulated the Amazon. In Yasuni, a single hectare of rainforest is home to more than 100,000 species of insects as well as the largest number of tree species in the world. The area is also home to two indigenous tribes that live in isolation as they have for thousands of years. The Tagaeri and Tarmenane tribes depend on the land and have deep ties to nature, which they revere. UNESCO declared Yasuni National Park a biosphere reserve and cultural heritage site in 1989.

The Ecuadorian government declared that 700,000 hectares of the park should be protected from any activity that may negatively affect the bio- and cultural diversity of the region. In 2007, aiming to conserve **biodiversity**, protect indigenous people's right to life, and avoid CO<sub>2</sub> emissions, Ecuadorian president Rafael Correa initiated the Yasuni-ITT (Ishpingo-Tambococha-Tipotini) project. This project had as its aim to protect the park from oil exploration. This leave-it-in-the-ground initiative was to be realized when, in exchange for pledges of US\$360 million annually from the international community over a ten year period (for a total of \$3.6 billion), the Ecuador government would prohibit oil exploration in the Yasuni-ITT. This sum was half of the estimated amount the government would have received annually from oil revenue. Unfortunately, after the Yasuni-ITT fund was launched in 2010, less than US\$200 million was pledged by 2012. Pressures for oil drilling are strong. Oil drilling has been taking place in other parts of the rainforest since the 1940s. In 2012, access roads were built in sections neighboring the Yasuni-ITT section. In 2013, President Correa concluded that oil extraction from the park was necessary to lift the country out of poverty. In 2014, the government signed permits for oil drilling in the Yasuni National Park. A subsidiary of the state oil company, Petroamazonas, began extracting oil from one of the most biodiverse hotspots in 2016. Although several petitions to abandon drilling in the area have been launched, the Ecuadorian govern-

ment has rejected them. In addition to the predictable environmental damages and possible oil spills, the drilling encroaches on the indigenous communities of the rainforests.

Despite criticism from environmental groups, the oil company Petroamazonas won recognition from the Energy Institute (EI) for its efforts to mitigate the environmental impact of oil extraction in Yasuni National Park by building “canopy bridges” for wildlife to cross access roads. Additionally, as the government claimed it would do, a portion of the revenue from oil extraction has been reinvested in public infrastructure and facilities.

**YELLOWSTONE NATIONAL PARK.** An act of the U.S. Congress endorsed in 1872 created Yellowstone National Park in Wyoming. The park covers an area of 800,000 hectares and was the first **national park** to be formally created by a government anywhere in the world. As of the end of 2016, there were 417 national parks, monuments, and other sites in the United States.

# Z

**ZERO-ENERGY BUILDING.** Buildings where the annual net energy consumption is equal to or less than the energy produced from renewable sources connected to the building are known as “zero-energy buildings.” In this way, the use of nonrenewable energy, including fossil fuel, can be avoided and consequently greenhouse gas emissions reduced. The zero-energy building concept came from the idea that buildings can meet all their energy needs using locally available and renewable resources. In many developed countries such as the **United States**, roughly 30 to 40 percent of total energy is consumed in residential and commercial buildings. Zero-energy buildings are similar to the passive-house concept, where buildings are so well insulated that they require little to no additional energy for heating or cooling purposes. In **Germany**, passive houses achieve very low consumption of energy, equivalent to less than 1.5 liters of oil or 1.5 cubic meters of gas to heat one square meter of living space for a year by using the sun and internal heat sources efficiently. Amory Lovins helped pioneer the concept of passive and net-zero-energy housing when he built his own home in 1984 in Old Snowmass, Colorado. Using the best energy technologies available at the time and with attention to natural lighting and insulation, he built a showcase home that has inspired millions to pursue sustainable architecture.

**ZERO WASTE.** This is a concept that refers to designing and managing products so that the waste volume and toxicity can be minimized and ultimately eliminated. According to the Zero Waste International Alliance, zero waste is “a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use.” Zero waste can be realized if the current culture of linear production, consumption, and disposal patterns change. Also, waste-management systems and infrastructure need to be redesigned. There are organizations that promote zero waste at various levels from local to international, and many individuals demonstrate zero-waste lifestyles. *See also* CIRCULAR ECONOMY; CRADLE-TO-CRADLE DESIGN.



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## INTRODUCTION

A growing number of scholarly journals address green issues. This bibliography lists many of the best-known journals in the field, including *Environmental Politics*, *Global Environmental Politics*, and *Environmental Values*. In addition, numerous magazines and journals have contributed to the articulation of green issues, not the least of which is *The Ecologist*. A considerable portion of available information appears in a more ephemeral form: online websites, Facebook sites, and YouTube videos. Information about green movements and parties and their activities is often communicated only in this form. Databases, portals, and performance rankings relevant to green parties, movements, literature, activities, and events are also included.

To aid educators, we've also provided an annotated list of environmental education sources and environmental news sources as well as a lengthy list of environmental think tanks and environmental nongovernmental organizations, along with contact information. Those interested in green parties will be interested in the listing of national green parties from around the world, as well as green parties at the subnational level in Austria, Canada, Germany, and the United States. Finally, major international environmental conferences and agreements are followed by documentaries and films dealing with green activists, movements, and events.

The bibliography is divided into several different sections in an effort to categorize some of the key themes in green politics and policy. While it is impossible to cover all relevant literature, it is the authors' hope that the reference list will help readers find both older works that gave a powerful impetus to the green movement and newer developments related to the successes (and failures) of the green movement, their role in policy governance, and the programs and ideas they promote.

Differences in the opportunities available to green movements in different cultural and political settings and in the influence they have are well covered in what has come to be a major field of academic research as well as popular interest.

Pioneering work in the field includes *Silent Spring* by Rachel Carson, *The Population Bomb* by Paul Ehrlich, *A Sand County Almanac* by Aldo Leopold, *The Limits to Growth* by Dennis Meadows and his collaborators, and *Small Is Beautiful* by E. F. Schumacher. Extracts from influential works are contained in several valuable collections of essays, for instance, in *The Green Reader*, edited by Andrew Dobson; *The Politics of the Environment*, edited by Robert Goodin; and *Green Planet Blues*, edited by Ken Conca and Geoffrey Dabelko. A compilation of famous speeches by pioneering thinkers can be found in *Environmental Speeches That Moved the World*, edited by Alan Tol. The literature on green concepts also includes critiques and alternatives

to some of the ideas of proponents of the green movement, for example, *The Green Crusade: Rethinking the Roots of Environmentalism* by Charles T. Rubin, *Green Political Theory* by Robert Goodin, and *The Post-Industrial Utopians* by Boris Frankel.

The influence of the green movement has been enhanced by, as well as stimulated writings on, the reshaping of the economy; relationships between humans and nature; ways of reforming the political system; and the introduction of new policies to deal with a wide range of issues, including damage to the environment, climate change, biodiversity loss, and the emergence of new social structures. Environmental- and energy-democracy, ecojustice, ecofeminism, sustainable development, and animal rights issues are just some of many that green politics has come to address.

Highly influential works that have attempted to reconcile development with the environment have stimulated interest in green issues among policy makers. Early works in this vein include *Blueprint for a Green Economy* by David Pearce and his collaborators, *Changing Course: A Global Business Perspective on Development and the Environment* by Stephan Schmidheiny, and *Earth Politics* by Ernst Ulrich von Weiszacker. These present a wide range of ideas on how business and government can work toward addressing many of the key concerns of the green movement. Other pivotal works include *Steady-State Economics* by Herman Daly, *The Economics of Welfare* by Arthur Cecil Pigou, and *The Costs of Economic Growth* by E. J. Mishan. More recent thinking on ecological modernization, paths to sustainability, green growth, and consumerism has brought new perspectives into the debate. Examples include *Too Much Stuff: Capitalism in Crisis* by Kozo Yamamura and *Beyond Green Consumerism* by Sandy Irvine.

The “New Politics” section of this bibliography includes works that attempt to understand the green movement as a novel political phenomenon or as the articulation of concerns that had for many years received limited attention politically. *New Politics*, edited by Ferdinand Müller-Rommel and Thomas Poguntke, contains a useful collection of analytical studies in this field.

Nobel laureate Elinor Ostrom’s work on collective action for the environment has been particularly influential. Her most famous work, *Governing the Commons: The Evolution of Institutions for Collective Action*, challenges the conclusions of Garrett Hardin’s *The Tragedy of the Commons*. Further notable works addressing the link between green politics and governance include Walter F. Baber and Robert V. Bartlett’s *Deliberative Environmental Politics: Democracy and Ecological Rationality*, Robyn Eckersley’s *The Green State: Rethinking Democracy and Sovereignty*, and Frank Fischer’s *Climate Crisis and the Democratic Prospect: Participatory Governance in Sustainable Communities*. Andrew Jamison’s *The Making of Green Knowledge: Environmental Politics and Cultural Transformation* is an excellent

analysis of how green ideas developed over time. Josh Geller examines how green ideas are being institutionalized in *The Global Emergence of Constitutional Environmental Rights*.

The World Commission on Environment and Development popularized the concept of sustainable development in *Our Common Future*. Recent work has turned to examining how sustainable development is being or can be promoted in developing countries. An example is Laurence L. Delina's *Accelerating Sustainable Energy Transition(s) in Developing Countries: The Challenges of Climate Change and Sustainable Development*. The importance of the United Nations' Sustainable Development Goals is another area of substantial interest, as found in the edited collection by Norichika Kanie and Frank Biermann *Governing through Goals: Sustainable Development Goals as Governance Innovation*. The idea that, for the first time in history, humans are altering the very planet they live on is embedded in the notion of the anthropocene. Frank Biermann takes up this theme in *Earth Systems Governance: World Politics and the Anthropocene*.

Of course, the many actors driving a transition toward green politics are very important. These include green activists, environmental movements, environmental nongovernmental organizations (NGOs), and green parties. A special issue of the journal *Social Research*, edited by Jean Cohen and published in 1985, includes valuable essays by writers such as Klaus Eder, Claus Offe, and Jean Cohen that introduce the reader to key early analysts of the field. Other important early sociological approaches to the green movement can be found in works such as Alberto Melucci's *Nomads of the Present* and Alain Touraine's *Anti-nuclear Protest*. More recent comparative work on nuclear-waste governance includes the series of edited volumes *Nuclear Waste Governance* by Achim Brunnengraber and colleagues, which explores a particularly challenging issue for green advocates.

Michele Betsill and Elisabeth Corell's work on NGOs in international environmental negotiations is noteworthy: *NGO Diplomacy: The Influence of Nongovernmental Organizations in International Environmental Negotiations*.

Green movements and parties receive substantial attention. There are sociological accounts of how the green movement can be regarded as a social movement that has redefined the boundaries of political action. Drawing on the work of Margaret Keck and Kathryn Sikkink, *Activists beyond Borders: Advocacy Networks in International Politics*, numerous studies have explored how movements have gone transnational. One good example is Paul Steinberg's *Environmental Leadership in Developing Countries: Transnational Relations and Biodiversity Policy in Costa Rica and Bolivia*.

There are numerous other comparative studies of the green movement. These include Brian Doherty's *Ideas and Actions in the Green Movement*; Timothy Doyle's *Environmental Movements*; John Dryzek, David Downs,



Hans-Kristian Hernes, and David Schlosberg's *Green States and Social Movements: Environmentalism in the United States, United Kingdom, Germany, and Norway*; Miranda Schreurs's *Environmental Politics in Japan, Germany, and the United States*; and Dave Toke's *The Politics of GM Food: A Comparative Study of the UK, USA, and EU*.

The section on green parties is divided into books and articles covering different countries and regions. There are significant early studies, such as Herbert Kitschelt's *The Logics of Party Formation*, which compares developments in Belgium and West Germany, as well as a series of monographs in *Green Politics*, edited by Wolfgang Rudig, which are important sources of information and investigations of green political organizations around the world. Among the works bringing together accounts of early developments in green parties in various countries are *Green Parties: An International Guide* by Sara Parkin; *New Politics in Western Europe: The Rise and Success of Green Parties and Alternative Lists*, edited by Ferdinand Müller-Rommel; and *The Green Challenge: The Development of Green Parties in Europe*, edited by Dick Richardson and Chris Rootes. Many other excellent works have been written. Classics include David Vogel's *National Styles of Regulation: Environmental Policy in Great Britain and the United States*, Martin Jänicke's *State Failure*, and Albert Weale's *The New Politics of Pollution*. Early comparative studies on green politics include those on the United States and the European Union, such as *Designs on Nature: Science and Democracy in Europe and the United States* by Sonja Boehmer-Christiansen and *Green Giants? Environmental Policies of the United States and the European Union* edited by Norman Vig and Michael Faure.

Much of the literature on green parties is focused on the European Union, which has become one of the most active regions in the world in terms of green activism and policy developments. The collection edited by Emilie van Haute, *Green Parties in Europe*, examines developments into the mid-2010s. Numerous articles, chapters, and some books on green parties explore developments in other world regions as well. Particularly prominent are developments in countries like Germany and Sweden.

More recent works delving into climate politics, environmental justice and ethics, and ecofeminism take green politics into new areas. An example is Liam Downey's *Inequality, Democracy, and the Environment*. It is hoped that this bibliography will help familiarize the reader with some of the key areas of research related to green politics and policies.

**PROFESSIONAL JOURNALS**

- Ecological Economics*. Elsevier. A transdisciplinary journal of the International Society for Ecological Economics.
- Ecology & Society*. Creative Commons. An electronic, peer-reviewed, multidisciplinary journal.
- Energy Policy*. Elsevier. Peer-reviewed articles addressing energy-policy issues from both theoretical and empirical perspectives.
- Environmental History*. Oxford Academic. Forest History Society and the American Society for Environmental History. This interdisciplinary journal addresses issues tied to human interactions with the natural world over time.
- Environmental Law Reporter*. elr.info. A high-quality journal on environmental law dealing with the issues of air, climate change, energy, governance, land use, natural resources, toxic substances, waste, water, and wildlife.
- Environmental Policy and Governance*. John Wiley & Sons. This journal focuses on environmental policies introduced by governments as well as on the diverse forms of environmental governance that emerge in markets and civil society. Articles range from the local to the global.
- Environmental Politics*. Taylor & Francis. This interdisciplinary journal deals with scholarship on green parties and environmental and social movements and NGOs; the definition, negotiation, and implementation of environmental policy; and environmental political thought.
- Environmental Values*. White Horse Press. A refereed interdisciplinary journal concerned with the present and future environment of human beings and other species. The journal aims to clarify the relationship between practical policy issues and more fundamental underlying principles and assumptions.
- Environment and Society: Advances in Research*. Berghahn. An annual journal that examines debates on water crises, deforestation, biodiversity loss, the looming energy crisis, nascent resource wars, environmental refugees, climate change, and environmental justice. Many contributions are by environmental anthropologists, environmental scientists, environmental geographers, and human ecologists.
- Environment: Science and Policy for Sustainable Development*. Taylor & Francis. This journal offers both peer-reviewed articles and commentaries. The focus is on the problems, places, and people where environment and development come together.
- Global Environmental Change*. Elsevier. This peer-reviewed international journal publishes articles about the human and policy dimensions of global environmental change.

- Global Environmental Politics*. MIT Press. An interdisciplinary journal focused on global political forces and environmental change with particular attention to their meaning for world politics. It publishes on issues from water, waste management, climate change, state and nonstate actors in environmental governance, multilateral institutions and agreements, innovative governance arrangements, trade, and global finance.
- GreenJournal.co.uk*. An online journal related to green energy run by a group of young enthusiasts in the United Kingdom.
- International Journal of Environmental Studies*. This journal favors an interdisciplinary, holistic approach to the environment. It welcomes a wide array of topics: land, water, food, conservation, population, risk analysis, energy, economics of ecological and non-ecological approaches, social advocacy of arguments for change, legal measures, implications or urbanism, energy choices, waste disposal, recycling, and transport systems.
- International Journal of Green Energy*. Taylor & Francis. An interdisciplinary journal on the forms and utilizations of energy that have low or minimal impact on environment and society.
- Journal of Environmental Law*. Oxford Academic. A scholarly and peer-reviewed journal with an emphasis on legal and policy developments and case law pertaining to the environment.
- Journal of Environmental Planning and Management*. Taylor & Francis. True to its name, the journal specializes on all aspects of environmental planning and management, including environmental policy and legislation, sustainable development, natural resource planning and management, environmental and strategic impact assessment, environmental management, environmental economics, valuation and natural resource accounting, and regulatory and market-based instruments for environmental management.
- The Journal of Environment & Development*. Sage. An interdisciplinary journal focused on sustainable development, national and international environmental policies, and a range of environmental issues.
- Journal of Human Rights and the Environment*. Edward Elgar Publishing. This biannual peer-reviewed journal provides an academic forum concerning the challenges of human rights and the environment.
- Journal of Political Ecology*. University of Arizona Library. A peer-reviewed open-access journal, which explores the linkages between political economy and human environmental impacts across locations and academic disciplines, and makes a contribution to the interdisciplinary field of political ecology.
- Nature and Culture*. Berghahn Books. A peer-reviewed journal that deals with issues related to the historical and contemporary relationships that societies have with nature.

*Nature Climate Change*. Nature. This high-impact peer-reviewed journal publishes articles on climate change coming from the natural and social sciences.

*Organization and Environment*. Sage. A peer-reviewed journal that examines social organizing as it relates to the natural world.

*Renewable Energy, An International Journal*. World Renewable Energy Network. Disseminates knowledge related to renewable energy and its components.

*Zeitschrift für Umweltpolitik & Umweltrecht*. Deutscher Fachverlag GmbH. Introduces environmental policy and legal issues in Germany, Europe, and internationally. German language.

## ENVIRONMENTAL DATABASES, PORTALS, AND RANKINGS

The American Society of International Law, [asil.org/resource/env1.htm](http://asil.org/resource/env1.htm). Guide to electronic resources for international law.

Analysis, Integration and Modeling of the Earth System (AIMES), [futureearth.org/projects/aimes-analysis-integration-and-modelling-earth-system](http://futureearth.org/projects/aimes-analysis-integration-and-modelling-earth-system). AIMES was part of the International Geosphere-Biosphere Programme's (IGBP) project to develop quantitative understandings of the role of human perturbations to the Earth's biogeochemical cycles and their interactions with the physical climate system. AIMES's databases include the Global Emissions Inventory Analysis ([geiacenter.org/](http://geiacenter.org/)).

Biodiversity Indicators Partnership, [bipindicators.net/](http://bipindicators.net/).

Biographies—Environmental Activists. [biography.com/people/groups/activists-environmental-activists](http://biography.com/people/groups/activists-environmental-activists). Introduces individuals who have played key roles in promoting environmental issues.

Carnegie Mellon University Libraries—Environmental History, [andrew.cmu.edu/user/sc24/History/environment.html](http://andrew.cmu.edu/user/sc24/History/environment.html). A useful website with links to many environmental topics: history; literature; associations, organizations, and institutions; biographical resources; Internet guides; journals and magazines; and statistical resources.

Center for Climate and Energy Solutions (C2ES), [c2es.org/](http://c2es.org/). C2ES is an independent, nonpartisan, nonprofit organization working to advance strong policy solutions and actions to climate change. It is the successor to the Pew Center on Global Climate Change.

Center for International Earth Science Information Network (CIESIN Columbia University), [ciesin.org/](http://ciesin.org/). CIESIN provides interactive data access and mapping tools via the Internet, and the website provides links to various databases and a search engine for locating data. The website also provides links to related research groups and organizations. The organiza-

- tion supports interdisciplinary approaches to the study of the environment, develops global and regional information systems, and provides training and technical-support services.
- Central Intelligence Agency (CIA), [cia.gov/library/publications/the-world-factbook/appendix/appendix-c.html](http://cia.gov/library/publications/the-world-factbook/appendix/appendix-c.html). Offers a list of international environmental agreements and parties to those agreements.
- Climate Action Tracker, [climateactiontracker.org/](http://climateactiontracker.org/). An independent scientific analysis produced by three organizations (Climate Analytics, New Climate Institute, and Ecofys). It is supported by ClimateWorks Foundation and the German Ministry for Environment, Nature Conservation and Nuclear Safety via the International Climate Initiative. It tracks climate action around the world.
- Climate Funds Update, [climatefundsupdate.org/](http://climatefundsupdate.org/). Provides information and data on the growing number of multilateral climate finance initiatives designed to help developing countries address the challenges of climate change.
- Climate Reality Project Australia, [climateresality.org.au](http://climateresality.org.au). This is Al Gore's climate change leadership program; it is hosted by the Melbourne Sustainable Society Institute.
- Dirty Dozen and Clean 15, [ewg.org/foodnews/dirty-dozen.php](http://ewg.org/foodnews/dirty-dozen.php). Environmental Working Group produces a yearly list of produce contaminated with pesticides. The 2018 shopper's guide lists strawberries, spinach, nectarines, apples, grapes, peaches, cherries, pears, tomatoes, and celery as produce that often maintains pesticide residues. The EWG provides a healthy-living app with ratings of over 100,000 food and personal-care products.
- EarthDirectory.Net Network, [earthdirectory.net/network](http://earthdirectory.net/network). The EarthDirectory.net Network of Environmental Directories and Blogs run by the United States Environmental Directories, Inc., provides information about environmental news, events, and jobs. It organizes information by country and region as well as thematic area (e.g., animal protection, sustainable agriculture, coral reefs, energy, food safety, ecotourism, energy, forests and rainforests, fracking, nuclear power, oceans, and peak oil). Within these categories are links to websites of relevant organizations and groups.
- Envirolink, [envirolink.org](http://envirolink.org). A nonprofit organization runs this site, which is dedicated to providing up-to-date environmental information and news. It provides a wide array of information on agriculture, air quality, climate change, ecosystems, environmental legislation, sustainable living, wildlife, and many other categories.
- Environmental Awards Worldwide. The European Environmental Foundation keeps a database of environmental awards issued worldwide, with links to the award programs. Awards include: BAUM Environmental Prize, Binding Prize for the Protection of Nature and Environment, Bec-

querel Prize, Blue Planet Prize, Bruno H. Schubert Prize, Champions of the Earth Award, Empowering People Award, Eni Award, Environmental Heroes, EuroNatur-Award, Frontiers of Knowledge Awards, Future of Nature Awards, German Environmental Prize, German Sustainability Award, Global Environment Citizen Award, Green Star Awards, IAIA Global Environmental Award, Indira Gandhi Paryavaran Puraskar (Indira Gandhi Environment Award), International Environmental Law Award, ÖGUT Umweltpreis, Right Livelihood Award, Rolex Awards, Sierra Club John Muir Award, SolarWorld Einstein Award, The Ashden Awards, The Goldman Environmental Prize, the Heinz Awards, the Hillary Laureates for Exceptional Leadership in Climate Change Solutions, the Nuclear-Free Future Award, the Peter Rawlinson Conservation Award, the Rachel Carson Prize, the Sheila McKechnie Foundation Campaigner Award, the Sophie Prize, the St Andrews Prize for the Environment, TIME Magazine “Hero of the Environment” award, Trophée de femmes, Tyler Prize for Environmental Achievement, Umwelt Medienpreis, Umweltpreis Schweiz, UNEP Sasakawa Prize, UNESCO Sultan Qaboos Prize for Environmental Preservation, Volvo Environment Prize, Whitley Awards, Zayed Future Energy Prize, and Zayed International Prize for the Environment.

Environmental Performance Index, [epi.yale.edu/](http://epi.yale.edu/). This index identifies specific targets for environmental performance and measures how close each country comes to these established goals. The index was developed by the Center for Environmental Law and Policy at Yale University and the Center for International Earth Science Information Network (CIESIN) at Columbia University in collaboration with the World Economic Forum and the Joint Research Centre of the European Commission.

Environmental Protection Agency, U.S. Environmental Dataset, [gateway-edg.epa.gov/metadata/catalog/main/home.page](http://gateway-edg.epa.gov/metadata/catalog/main/home.page). Data products are available at the national and regional levels for the United States on climate change (e.g., change in first-leaf date, change in magnitude of river flooding, relative sea level change, average temperatures, rate of temperature change), level III and IV ecoregions, national hydrology data set, and environmental justice (demographic indicators, environmental indicators, public health indicators, and EJSCREEN indexes).

Environmental Score Card, [scorecard.lcv.org](http://scorecard.lcv.org). The League of Conservation Voters ranks the U.S. president, senators, and congressional representatives on their voting records on environmental matters. The scorecard also provides information on and an evaluation of environmental legislation.

Environmental Treaties and Resource Indicators (ENTRI), [edac.ciesin.columbia.edu/entri/](http://edac.ciesin.columbia.edu/entri/). Produced by the Center for Earth Science Information Network (CIESIN) at Columbia University and the Socio Ec-

- onomic Data and Applications Center (SEDAC), this search engine locates treaties according to search criteria in various issue and topical areas and provides full-text access to treaties.
- Environment and Society Portal (Rachel Carson Center), [environmentandsociety.org](http://environmentandsociety.org). A link to environmental resources, including virtual exhibitions; environmental histories (Arcadia); a multimedia open-access digital archive with scholarly, artistic, and popular environmental matters; and the Rachel Carson Center's online journal *RCC*.
- European Environment Agency (EEA). The EEA provides an extensive database of information related to the environmental activities and performance of EEA member states. Maps, graphs, and datasets are a few of the resources available.
- European Union (EUROPA), [europa.eu/pol/env/index\\_en.htm](http://europa.eu/pol/env/index_en.htm). The European Union's environmental portal provides up-to-date information on the state of the environment, policy initiatives, and legislative issues.
- FAOStat, [faostat3.fao.org/browse/G1/\\*/E](http://faostat3.fao.org/browse/G1/*/E). A collection of food and agricultural data for 245 countries and territories starting in 1961.
- Freshwater Research and Environmental Database, [igb-berlin.de/freshwater-research-and-environmental-database](http://igb-berlin.de/freshwater-research-and-environmental-database). The IGB Leibniz-Institute of Freshwater Ecology's collection of environmental field data, including long-term records of physical and water-chemical variables as well as biological data, is available here.
- GEP-guide.net to Global Environmental Politics, [ieinfo.net](http://ieinfo.net). This is an online information nexus categorizing hundreds of websites on earth governance, global environmental politics, transborder nature conservation, sustainable development diplomacy, international environmental law and diplomacy, and transboundary natural resource management. Created by Charles Chester, Tufts University.
- Global Environmental Database, [db.cger.nies.go.jp/portal/geds/index](http://db.cger.nies.go.jp/portal/geds/index). This database provides long-term monitoring data, data-analysis results, and output models. It provides data in original format as well as NASA AMES format. The database is managed by the Center for Global Environmental Research in Japan.
- Going Green, [thrall.org/special/goinggreen.html](http://thrall.org/special/goinggreen.html). This database put together by the Middletown Thrall Library provides information on sustainable living, ecofriendly advice and alternatives, environmentally mindful lifestyles, and learning resources.
- Greenevolution. Greenevolution is a company that offers integrated environmental services, working for governments and the private sector to effectively reduce greenhouse gas emissions. Its website has links to leading environmental think tanks and NGOs and also to various organizations and websites by thematic categories (climate change, energy, carbon management, forests, and waste management).

GreenFILE, [ebscohost.com/academic/greenfile](http://ebscohost.com/academic/greenfile). A research database for finding academic articles, government documents and other papers related to environmental issues.

Green Growth Knowledge Platform Project Database, [greengrowthknowledge.org/projects/browse](http://greengrowthknowledge.org/projects/browse). This database launched by Environment for Development (EfD) introduces users to on-the-ground initiatives to promote green growth around the world. Nominations can be made online.

Green Ranking, [newsweek.com/green-rankings-2017-18](http://newsweek.com/green-rankings-2017-18). An environmental performance assessment by *Newsweek* of the world's largest publicly traded companies.

Green Scorecard, [eauc.org.uk/green\\_scorecard\\_launched](http://eauc.org.uk/green_scorecard_launched). The Association of University Directors of Estates (AUDE) in collaboration with the Environmental Association for Universities and Colleges (EAUC) launched the Green Scorecard as a comprehensive tool to help higher education institutions in the UK measure the sustainability work they do.

Hieros Gamos—World Environmental Law, [hg.org/environ.html](http://hg.org/environ.html). This is a resourceful database of international environmental treaties, as well as environmental laws in different regions of the world.

International Energy Agency Policies & Measures Databases, [iea.org/policiesandmeasures/](http://iea.org/policiesandmeasures/). This site provides access to databases on climate change policies and measures, renewable energy policies, and energy efficiency policies for countries around the world.

International Environmental Agreements (IEA) Database Project, [iea.uoregon.edu/page.php?file=home.htm&query=static](http://iea.uoregon.edu/page.php?file=home.htm&query=static). Full texts, amendments, and members of over 1,100 multilateral and 1,500 bilateral agreements on environmental issues are available. Created by Ronald Mitchell, University of Oregon.

International Renewable Energy Agency (IRENA) data dashboard. Data are available related to renewable energy capacity and generation, patents, policy, finance, costs, employment, climate change, and other topics.

Inventory of Conflict and Environment (ICE), [mandalaprojects.com/wordpress/index.php/ice/](http://mandalaprojects.com/wordpress/index.php/ice/). Case studies based on 16 categories, many of which have coded attributes.

IUCN Red List of Threatened Species, [iucnredlist.org/](http://iucnredlist.org/). This list covers species that are endangered or threatened with extinction worldwide.

NGO Databases and Directories, [gdr.org/ngo/ngo-databases.html](http://gdr.org/ngo/ngo-databases.html). This is a meta-directory of NGO databases and directories for different regions of the world (including Asia, Africa, Latin America and the Caribbean, Central and Eastern Europe and Russia, Europe, and North America), for worldwide, and for the UN and international organizations.

OECD Environmental Data and Indicators, [oecd.org/env/indicators-modeling-outlooks/data-and-indicators.htm](http://oecd.org/env/indicators-modeling-outlooks/data-and-indicators.htm). The OECD collects a wealth of information on environmental pollution (greenhouse gas emissions by



- source, water quality, municipal waste, primary waste by sectors), policies and measures (environmental-protection expenditure and revenues, environmental-policy instruments, green-growth indicators, agri-environmental indicators), and natural resources (water resources, forest resources, material resources, threatened species) for OECD member countries.
- Pollution Scorecard, [scorecard.org/](http://scorecard.org/). By entering a U.S. zip code, pollution levels in the surrounding area can be accessed.
- Think Tanks and Civil Societies Program (TTCSP) Global Go To Think Tank Index Reports. Each year, the University of Pennsylvania's TTCSP issues a report that discusses the activities and roles of think tanks and ranks them by their perceived influence. This is done by category and world region. It surveys various types of think tanks (autonomous and independent, government affiliated, quasi-independent, quasi-governmental, quasi-independent, university affiliated, political-party affiliated, and corporate) working on various thematic areas (e.g., defense, domestic economic policy, environment, energy, foreign affairs, health, and international development).
- UI Green Metric. An initiative of the Universitas Indonesia, this world university ranking aims to assess the efforts of universities to promote sustainable policies and programs.
- World Bank Data. Environment: [data.worldbank.org/topic/environment](http://data.worldbank.org/topic/environment). Climate Change: [data.worldbank.org/topic/climate-change](http://data.worldbank.org/topic/climate-change). A databank of statistics collected by the World Bank.
- World Trade Organization (WTO) Environmental Database, [edb.wto.org](http://edb.wto.org). This database contains all environment-related notifications submitted by WTO members as well as environmental policies and measures mentioned in the Trade Policy Reviews of WTO members.
- WWF-India, Core Environmental NGOs List, [wwfenvis.nic.in/Database/EnvironmentalNGOs\\_5623.aspx](http://wwfenvis.nic.in/Database/EnvironmentalNGOs_5623.aspx). A list of information on India-based NGOs working in the environmental sector.

## ENVIRONMENTAL EDUCATION RESOURCES

- Centers for Sustainability across the Curriculum, [aashe.org/partners/centers-for-sustainability-across-the-curriculum/](http://aashe.org/partners/centers-for-sustainability-across-the-curriculum/).
- Climate Literacy & Energy Awareness Network, [cleanet.org/index.html](http://cleanet.org/index.html). Hundreds of free learning resources, including videos, visualizations, website links, quizzes, musicals, teaching units. All material is related to climate and energy science.

Environmental Literacy Council Teaching Resources, [enviroliteracy.org/teaching-resources/](http://enviroliteracy.org/teaching-resources/). Offers information and related resources on a variety of environmental topics, such as air, climate, weather; ecosystems (biodiversity, classifying species, drivers of biodiversity loss, habitats, biomes, ecoregions, hotspots of biodiversity, steps toward conservation, value of biodiversity), energy, environment and society, food, and land use. The teacher exchange permits the sharing of teaching tools.

Fishbanks, [mitsloan.mit.edu/LearningEdge/simulations/fishbanks/Pages/fish-banks.aspx](http://mitsloan.mit.edu/LearningEdge/simulations/fishbanks/Pages/fish-banks.aspx). A multiplayer web-based simulation where students can play the role of fishers and learn about the challenges related to sustainable resource management.

Green Activities and Classroom Resources, [teachervision.com/green-activities](http://teachervision.com/green-activities). Activities and guides intended to encourage students to live a greener lifestyle. Topics include reducing trash, litter, and waste; resource consumption; recycling tips and tricks; protection of ecosystems; making your school a greener place; minimizing pollution; environmental science.

K12 Science: A portal to SERC's Resources for K12 Science Teachers, [serc.carleton.edu/k12/index.html](http://serc.carleton.edu/k12/index.html). Links to a variety of teaching tools and resources including for climate change and global warming, energy, and other related topics.

Lesson Plans, Teacher Guides and Online Environmental Resources for Educators (U.S. Environmental Protection Agency), [epa.gov/students/lesson-plans-teacher-guides-and-online-environmental-resources-educators](http://epa.gov/students/lesson-plans-teacher-guides-and-online-environmental-resources-educators). Includes a variety of environmental and science-based lesson plans, activities, and ideas. Topics include: acid rain, healthy indoor air quality, noise pollution, particulate-matter air-sensor kits, basic ozone layer science, radiation, asthma, climate change (e.g., Generate! Game), NASA's Climate kids, ecosystems, energy, health, waste, and water.

Mercury Game, [mercurygame.scripts.mit.edu](http://mercurygame.scripts.mit.edu). This is a negotiation simulation designed to introduce players to the role of science in international environmental policy making. The game was written by Leah C. Stokes, Dr. Noelle E. Selin, and Dr. Lawrence E. Susskind. An evaluation of the game is available in Leah C. Stokes and Noelle E. Selin, "The Mercury Game: Evaluating a Negotiation Simulation That Teaches Students about Science-Policy Interactions," *Journal of Environmental Studies and Sciences* 6, no. 3 (2014): 597–605.

National Science Foundation: Earth & Environment Classroom Resources. Educators will find a collection of lessons and web resources for teachers, students, and families.

NOVA, [pbs.org/wgbh/nova/topic/earth/](http://pbs.org/wgbh/nova/topic/earth/). Videos and articles related to the earth and its environment.

- Social Rules Project, [rulechangers.org](http://rulechangers.org). The Social Rules Project is an educational initiative developed at Harvey Mudd College addressing how social rules or institutions shape our planet and our lives.
- World Climate Simulation, [climateinteractive.org/programs/world-climate/](http://climateinteractive.org/programs/world-climate/). This is a role-playing exercise of the UN climate change negotiations for groups that make use of an interactive computer model to analyze the results of mock negotiations.
- World Energy: A Climate and Energy Policy Negotiation Game, [mitsloan.mit.edu/LearningEdge/simulations/worldenergy/Pages/default.aspx](http://mitsloan.mit.edu/LearningEdge/simulations/worldenergy/Pages/default.aspx). This is a group role-playing simulation where participants have the opportunity to try out a mix of policies and strategies, such as carbon pricing and energy-efficiency technologies to address climate change.

## ENVIRONMENTAL NEWS SOURCES

- The Daily Climate, [dailyclimate.org/](http://dailyclimate.org/). The Daily Climate is an independent organization that collects daily news around the world to increase public understanding of climate change.
- Earth Negotiations Bulletin (ENB), [enb.iisd.org/enb/](http://enb.iisd.org/enb/). This is an independent news source on the United Nations' multilateral environmental and development negotiations. It is published by the International Institute for Sustainable Development-Reporting Services Division and is used by many observers for day-to-day updates during negotiations.
- ECO. Climate Action Network International, Eco Newsletters, [climatenetwork.org/eco-newsletters](http://climatenetwork.org/eco-newsletters). Provides an insiders look at what is happening in the international climate negotiations and the climate change movement. The newsletter reflects CAN's perspectives on these events. ECO has been published since the Stockholm Environment Conference in 1972.
- EcoWatch, [ecowatch.com/](http://ecowatch.com/). A news website reporting on environmental news, green living, sustainable business, science, and politics run by People for the Ethical Treatment of Animals.
- E Magazine, [emagazine.com/](http://emagazine.com/). *E, The Environmental Magazine* is a project of EarthTalk, Inc., which was started in 1990. It has as its mission to provide information about environmental issues and to share ideas and resources so that readers can live more sustainable lives while connecting with ongoing efforts for change. It provides information on climate change, recycling, waste reduction, microplastics, pollution prevention, wildlife, endangered species, and air and water quality, among other issues.

ENDS Europe, [endseurope.com/](http://endseurope.com/). This is an important European environmental news service. It covers climate, energy, waste and resources, chemicals, pollution, nature, products, and transport. The service offers news and comments, a document watch, and information about environmental jobs.

Environmental News Network (ENN), [enn.com/](http://enn.com/). The ENN seeks to inform, educate, and create a platform for global environmental action through the collection and dissemination of environmental news. It has become a source of resources, information, and interactive resources for individuals, organizations, and corporations interested in the environment.

Environmental News Service (ENS), [ens-newswire.com/index.asp](http://ens-newswire.com/index.asp). An international daily newswire offering the latest on environmental news, current issues, climate, water, food, forests, species, energy, and education.

Green Africa Directory, [greenafricadirectory.org/](http://greenafricadirectory.org/). This site provides introductions to numerous environmental and green groups in Africa. The directory is categorized by topic area (e.g., beauty, health, and sport; biodiversity and conservation; certification, eco labels, and awards; climate change and carbon; and so forth). Each of these categories is further subdivided. Biodiversity and conservation, for example, includes numerous sub-topics: animal rights and welfare; biodiversity and conservation organizations; biodiversity networks, knowledge, and data; biosafety, gene banks, seed banks, and GMOs; birds; business, economics and biodiversity; community conservation and stewardship; etc. In addition, there is information on courses, jobs, resources, and contests.

*Green European Journal*, [greeneuropeanjournal.eu](http://greeneuropeanjournal.eu). Launched in 2012, the *Green European Journal* is an editorially independent publication of the Green European Foundation. The journal seeks to provide a forum for dialogue among Greens on European issues.

*Grist magazine*, [grist.org/](http://grist.org/). *Grist* provides news and commentary with a bit of humor and a political twist dealing with issues such as climate, justice, politics, science, and food.

Guardian Unlimited, [theguardian.com/politics/green-party](http://theguardian.com/politics/green-party). This section of the **Guardian** introduces current news from the United Kingdom on green parties and their views on issues.

Huffpost Green, [huffingtonpost.com/green/](http://huffingtonpost.com/green/). News articles dealing with environmental issues are presented here.

Nature's Voice, [nrdc.org/naturesvoice/](http://nrdc.org/naturesvoice/). This is a bulletin of environmental campaigns and victories.

Planet Ark, [planetark.com/index.cfm](http://planetark.com/index.cfm). The website provides news and information about world environmental issues, campaigning activities in Australia and the United Kingdom, and scientific findings.

PlanetSave, [planetsave.com/](http://planetsave.com/). Daily environmental news from the United States and the world is available here.

Society for Environmental Journalists, [sej.org/headlines/list](http://sej.org/headlines/list). The society offers a resourceful site for journalists reporting on the environment.

TreeHugger, [treehugger.com/about/](http://treehugger.com/about/). This group seeks to be a one-stop shop for green news. Issues covered include design, living, science, technology, transportation, business, and energy.

## ENVIRONMENTAL THINK TANKS

Adelphi (Germany), [adelphi.de/de](http://adelphi.de/de)

African Wildlife Foundation, [awf.org/](http://awf.org/)

Agora Energiewende (Germany), [agora-energiewende.de/](http://agora-energiewende.de/)

Australia Institute, [tai.org.au/](http://tai.org.au/)

Brookings Institution (United States), [brookings.edu/](http://brookings.edu/)

Centre for Climate and Energy Solutions (C2ES), [c2es.org/](http://c2es.org/)

Centre for Development and the Environment, [cgdev.org/](http://cgdev.org/)

Centre for Economic and Ecological Studies (Cen2eco), [eldis.org/organisation/A7935](http://eldis.org/organisation/A7935)

Centre for European Policy Studies, [ceps.eu/](http://ceps.eu/)

Centre for International Forestry Research (CIFOR) Indonesia, [cifor.org/](http://cifor.org/)

Centre for Science and Environment, [cseindia.org/](http://cseindia.org/)

Centro Mexicano de Derecho Ambiental (CEMDA), [cemda.org.mx/](http://cemda.org.mx/)

Chatham House, [chathamhouse.org/](http://chathamhouse.org/)

CICERO, [cicero.oslo.no/en](http://cicero.oslo.no/en)

Club of Rome, [clubofrome.de/](http://clubofrome.de/)

Copenhagen Consensus Center, [copenhagenconsensus.com/](http://copenhagenconsensus.com/)

E3G Third Generation Environmentalism, [e3g.org/](http://e3g.org/)

Earth Institute, Columbia University, [earth.columbia.edu/](http://earth.columbia.edu/)

Earth Watch Institute, [earthwatch.org/](http://earthwatch.org/) Ecologic Institute, [ecologic.eu/de](http://ecologic.eu/de)

Energy and Resource Institute (TERI), [teri.in.org/](http://teri.in.org/)

European Environment and Sustainable Development Advisory Councils (EEAC), [eeac.eu/](http://eeac.eu/)

Forum for the Future (United Kingdom), [forumforthefuture.org/](http://forumforthefuture.org/)

Heinrich Böll Foundation, [boell.de/en](http://boell.de/en)

Institute du Développement Durable et Relations Internationales (IDDRI), [iddri.org/fr](http://iddri.org/fr)

Institute for Advanced Sustainability Studies (IASS) (Germany), [iass-potsdam.de/de](http://iass-potsdam.de/de)

Institute for European Environmental Policy, [ieep.eu/](http://ieep.eu/)

Institute for Global Environmental Strategies (IGES), [iges.or.jp/en/](http://iges.or.jp/en/)

International Institute for Applied Systems Analysis (IIASA), [iiasa.ac.at/](http://iiasa.ac.at/)

International Institute for Environment and Development, [iied.org/](http://iied.org/)

International Institute for Sustainable Development (IISD) (Canada), [iisd.org/](http://iisd.org/)  
Motu, New Zealand, [motu.nz/](http://motu.nz/)  
National Institute for Environmental Studies (NIES) (Japan), [nies.go.jp/index-e.html](http://nies.go.jp/index-e.html)  
Pew Center on Global Climate Change (United States), [pewresearch.org/topics/energy-and-environment/](http://pewresearch.org/topics/energy-and-environment/)  
Potsdam Institute for Climate Impact (PIK), [pik-potsdam.de/](http://pik-potsdam.de/). A leading German-based think tank addressing climate change and its impacts.  
Rachel Carson Center (Germany), [carsoncenter.uni-muenchen.de/index.html](http://carsoncenter.uni-muenchen.de/index.html)  
RAND Corporation, [rand.org/](http://rand.org/)  
Stockholm Environment Institute (SEI) (Sweden), [sei.org/](http://sei.org/)  
Think Tank 30 (Germany), [thinktank30.de/](http://thinktank30.de/)  
United Nations Environment Programme (UNEP), [unenvironment.org/](http://unenvironment.org/)  
World Resources Institute, [wri.org/](http://wri.org/)  
WorldWatch Institute, [worldwatch.org/](http://worldwatch.org/)  
Wuppertal Institute, [wupperinst.org/](http://wupperinst.org/)

## **ENVIRONMENTAL NONGOVERNMENTAL ORGANIZATIONS, GREEN GROUPS, AND GREEN MOVEMENTS**

1% for the Planet, [onepercentfortheplanet.org/](http://onepercentfortheplanet.org/)  
[350.org](http://350.org/), [350.org/](http://350.org/)  
Abolition 2000, [abolition2000.org](http://abolition2000.org)  
African American Environmentalist Association (AAEA), [aaenvironment.com/](http://aaenvironment.com/)  
African Biodiversity Network, [africanbiodiversity.org/](http://africanbiodiversity.org/)  
African Conservation Foundation, [africanconservation.org/](http://africanconservation.org/)  
African Wildlife Foundation, [awf.org/](http://awf.org/)  
The African Youth Initiative on Climate Change (AYICC), [facebook.com/  
The-African-Youth-Initiative-on-Climate-Change-AYICC-  
161214162089/](https://facebook.com/The-African-Youth-Initiative-on-Climate-Change-AYICC-161214162089/)  
Avaaz, [avaaz.org/](http://avaaz.org/)  
Basel Action Network, [ban.org/](http://ban.org/)  
Basic Income Earth Network, [basicincome.org](http://basicincome.org)  
BirdLife International, [birdlife.org/C40](http://birdlife.org/C40), [c40.org/](http://c40.org/)  
Carbon Disclosure Project, [cdp.net/](http://cdp.net/)  
The Center for International Environmental Law (CIEL), [ciel.org/](http://ciel.org/)  
Citizens Network for Sustainable Development (CITNET), [citnet.org/](http://citnet.org/)  
Clean Water Action, [cleanwateraction.org/](http://cleanwateraction.org/)  
Clean Water Network, [clean-water-network.org/](http://clean-water-network.org/)

- Climate Action Network, [climatenetwork.org/](http://climatenetwork.org/)  
The Climate Reality Project, [climaterealityproject.org](http://climaterealityproject.org)  
Conservation International, [conservation.org](http://conservation.org)  
Dancing Star Foundation, [dancingstarfoundation.org/](http://dancingstarfoundation.org/)  
Deep Green Resistance, [deepgreenresistance.org/](http://deepgreenresistance.org/)  
Defenders of Wildlife, [defenders.org](http://defenders.org)  
DivestInvest, [divestinvest.org/](http://divestinvest.org/)  
Earth Day Network, [earthday.org](http://earthday.org)  
Earth First!, [earthfirst.org](http://earthfirst.org)  
Earth Hour, [earthhour.org/](http://earthhour.org/)  
Earth Island Institute, [earthisland.org/](http://earthisland.org/)  
Earth Justice, [earthjustice.org/](http://earthjustice.org/)  
EarthRights International, [earthrights.org/](http://earthrights.org/)  
Ecosocialist Horizons, [ecosocialisthorizons.com](http://ecosocialisthorizons.com)  
Environmental Action Germany (Deutsche Umwelthilfe [DUH]), [duh.de](http://duh.de)  
Environmental Defense Fund, [edf.org](http://edf.org)  
Environmental Law Institute, [eli.org/](http://eli.org/)  
Environmental Media Association, [green4ema.org/](http://green4ema.org/)  
European Wilderness Society, [wilderness.org.au/](http://wilderness.org.au/)  
Fair Trade International, [fairtrade.net/](http://fairtrade.net/)  
Fauna and Flora International, [fauna-flora.org/Fern](http://fauna-flora.org/Fern), [fern.org/](http://fern.org/)  
Fossil Free Divestment, [gofossilfree.org/](http://gofossilfree.org/)  
Friends of the Earth, International, [foei.org/](http://foei.org/)  
Friends of the Earth, U.S., [foe.org](http://foe.org)Frontier, [frontier.ac.uk/](http://frontier.ac.uk/)  
Future Earth, [futureearth.org/](http://futureearth.org/)  
German Association for the Environment and Nature Conservation (Bund für Umwelt und Naturschutz Deutschland [BUND]), [bund.net](http://bund.net)  
German Nature Conservation Association (Naturschutz Bund Deutschland [NABU]), [nabu.de](http://nabu.de)  
Global Environment Facility (GEF), [thegef.org/](http://thegef.org/)  
Global Footprint Network, [footprintnetwork.org/](http://footprintnetwork.org/)  
GLOBE International (Global Legislators' Organization for a Balanced Environment), [globelegislators.org/](http://globelegislators.org/)  
Green Belt Movement (GBM) (Kenya), [greenbeltmovement.org/](http://greenbeltmovement.org/)  
Green Climate Fund, [greenclimate.fund/](http://greenclimate.fund/)  
Green Cross International, [gcint.org/](http://gcint.org/)  
Green Korea United (South Korea), [greenkorea.org/](http://greenkorea.org/)  
Green Movement of Sri Lanka, [gmsl.lk](http://gmsl.lk)  
Greenpeace International, [greenpeace.org/international/](http://greenpeace.org/international/)  
GreenPolicy360, [greenpolicy360.net/](http://greenpolicy360.net/)  
Green Power, [greenpower.org.hk](http://greenpower.org.hk)  
Intergovernmental Panel on Climate Change, [ipcc.ch/](http://ipcc.ch/)

- International Campaign to Abolish Nuclear Weapons (ICAN), [icanw.org/campaign/campaign-overview/](http://icanw.org/campaign/campaign-overview/)
- International Institute for Environment and Development, [iied.org/](http://iied.org/)
- International Institute for Sustainable Development, [iisd.org](http://iisd.org)
- Korean Federation for Environmental Movement, [kfem.or.kr/](http://kfem.or.kr/)
- League of Conservation Voters, [lcv.org/](http://lcv.org/)
- The Mountain Institute, [mountain.org/](http://mountain.org/)
- Movement for the Survival of the Ogoni People, [facebook.com/MOSOPO-GONI/](https://facebook.com/MOSOPO-GONI/)
- National Audubon Society, [audubon.org/](http://audubon.org/)
- National Black Environmental Justice Network, [nbejn.org](http://nbejn.org)
- National Parks and Conservation Association (NPCA), [npca.org/](http://npca.org/)
- National Wildlife Federation (NWF), [nwf.org/](http://nwf.org/)
- Natural Resources Defense Council (NRDC), [nrdc.org/](http://nrdc.org/)
- The Nature Conservancy, [nature.org/](http://nature.org/)
- Pesticide Action Network, [pan-international.org/](http://pan-international.org/)
- Plant a Tree Today Foundation, [pattfoundation.org/](http://pattfoundation.org/)
- Post Carbon Institute, [postcarbon.org/](http://postcarbon.org/)
- Probe International, [journal.probeinternational.org/](http://journal.probeinternational.org/)
- Rainforest Action Network, [ran.org](http://ran.org)
- Rainforest Information Centre, [rainforestinfo.org.au/aboutthe.htm](http://rainforestinfo.org.au/aboutthe.htm)
- Research & Degrowth, [degrowth.org/](http://degrowth.org/)
- Sano Sansar Initiative, [sanosansar.org](http://sanosansar.org)
- Save Our Environment, [saveourenvironment.org/](http://saveourenvironment.org/)
- Sea Shepherd Conservation Society, [seashepherd.org](http://seashepherd.org)
- Sierra Club, [sierraclub.org/](http://sierraclub.org/)
- Socio-Ecological Union, [seu.ru/index.en.htm](http://seu.ru/index.en.htm)
- Stockholm Environment Institute (SEI), [sei-international.org/](http://sei-international.org/)
- Student Environmental Action Coalition, [seac.org/](http://seac.org/)
- Union of Concerned Scientists, [ucsusa.org/](http://ucsusa.org/)
- United States Public Interest Research Group (U.S. PIRG), [uspirg.org/](http://uspirg.org/)
- WESSA (the Wildlife and Environment Society of South Africa), [wessa.org.za/](http://wessa.org.za/)
- Wilderness Society (Australia), [wilderness.org.au/](http://wilderness.org.au/)
- Wilderness Society (United States), [wilderness.org](http://wilderness.org)
- Women's Earth Alliance, [womensearthalliance.org/](http://womensearthalliance.org/)
- Women's Environmental Network (WEN), [wen.org.uk/](http://wen.org.uk/)
- World Resources Institute (WRI), [wri.org](http://wri.org)
- Worldwatch Institute, [worldwatch.org/](http://worldwatch.org/)
- World Wide Fund for Nature/World Wildlife Fund (WWF), [wwf.org/](http://wwf.org/)



## GREEN PARTIES

### Federations of Green Parties

- African Greens Federation, [africangreens.org/](http://africangreens.org/)  
 Asia Pacific Greens Federation, [asiapacificgreens.org/](http://asiapacificgreens.org/)  
 Eastern African Green Federation, [easternafricagreens.org/about.html](http://easternafricagreens.org/about.html)  
 European Green Party, [europeangreens.eu/](http://europeangreens.eu/)  
 Federation of Young European Greens, [fyeg.org/](http://fyeg.org/)Global Greens, [global-greens.org](http://global-greens.org)  
 Global Young Greens, [globalyounggreens.org/](http://globalyounggreens.org/)  
 The Greens/European Free Alliance (European Parliament), [greens-efa.eu/](http://greens-efa.eu/)

### Green Parties by World Region

#### *Africa*

- Algeria: Parti Algérien vert pour le développement (Associate Member, African Greens Federation; Member, Global Greens), [facebook.com/Parti-algérien-vert-pour-le-developpement-1643736005929862/](https://facebook.com/Parti-algérien-vert-pour-le-developpement-1643736005929862/)  
 Burkina Faso: Rassemblement Des Ecologistes du Burkina Faso (Member, African Green Federation; Member, Global Greens), [facebook.com/RDEBFeCOLO/](https://facebook.com/RDEBFeCOLO/)  
 Burundi: Green Party (Vert)-Intwari (Member, African Green Federation). Suspended by the Minister of Interior in 2017.  
 Chad: Union des Ecologistes Tchadiens—LES VERTS (Member, African Green Federation; Member, Global Greens), [facebook.com/pages/Union-Des-Ecologistes-Tchadiens-Les-Verts/410959699075161](https://facebook.com/pages/Union-Des-Ecologistes-Tchadiens-Les-Verts/410959699075161)  
 Congo: Movement des Verts Congolais (Member, African Green Federation; Member, Global Greens)  
 Democratic Republic of Congo: Party Alliance of Congolese Ecologists (AECO—The Gardens) (Member, African Green Federation; Member, Global Greens), [aeco-rdc.net](http://aeco-rdc.net)  
 Egypt: Egyptian Green Party (Member, African Green Federation; Member, Global Greens), [facebook.com/EgyptianGreenParty/](https://facebook.com/EgyptianGreenParty/)  
 Guinea: Parti des Ecologistes Guineens, [facebook.com/partideseкологиstes.guineens.7](https://facebook.com/partideseкологиstes.guineens.7)  
 Ivory Coast: Rassemblement des Verts du Cote d’ivoire (Member, African Green Federation; Member, Global Greens)  
 Kenya: Green Congress of Kenya (Member, African Green Federation; Member, Global Greens), [gck.or.ke](http://gck.or.ke)

- Madagascar: Parti Vert Hasin'i Madagasikara (Member, African Green Federation; Member, Global Greens), [facebook.com/pages/category/Community/Hasini-Madagasikara-Parti-Vert-779195232176430/](https://facebook.com/pages/category/Community/Hasini-Madagasikara-Parti-Vert-779195232176430/)
- Mali: Parti Ecologiste du Mali (Member, African Green Federation; Member, Global Greens)
- Mauritius: Les Verts Fraternelles (Member, African Green Federation; Member, Global Greens), [facebook.com/vertsfraternelles](https://facebook.com/vertsfraternelles)
- Morocco: Parti des Verts Pour le Développement du Maroc (Member, African Green Federation; Member, Global Greens), [perso.menara.ma/~lesvertsmaroc/](https://perso.menara.ma/~lesvertsmaroc/)
- Mozambique: Ecological Party of Mozambique—Movement of Earth/ Partido Ecologista de Moçambique, [facebook.com/Partido-Ecologista-Movimento-da-Terra-PEC-MT-Mozambique-198111416877222/](https://facebook.com/Partido-Ecologista-Movimento-da-Terra-PEC-MT-Mozambique-198111416877222/)
- Niger: Rassemblement pour un Sahel Vert/Parti Vert du Niger (Member, African Green Federation; Member, Global Greens)
- Rwanda: Democratic Green Party of Rwanda/Parti Democratique Vert du Rwanda (Member, African Green Federation; Member, Global Greens), [rwandagreendemocrats.org/](https://rwandagreendemocrats.org/)
- Senegal: Convergence des Ecologistes du Sénégal (Member, African Green Federation; Member, Global Greens), [facebook.com/covergencedesecologistesdusenegal/](https://facebook.com/covergencedesecologistesdusenegal/)
- Somalia: Democratic Green Party of Somalia, [africagreenparty.20m.com/](https://africagreenparty.20m.com/)
- South Africa: Green Party of South Africa, [greenpartyofsouthafrica.com](https://greenpartyofsouthafrica.com)
- Togo: Afrique Togo Ecologie (ATE) (Member, African Green Federation; Member, Global Greens)
- Tunisia: (Member, African Green Federation; Member, Global Greens), Le Parti des Verts pour le Progrès, [facebook.com/PartiDesVertsPourLeProgresHzbAlkhudrLltqdm/](https://facebook.com/PartiDesVertsPourLeProgresHzbAlkhudrLltqdm/)
- Uganda: Ecological Party of Uganda (Member, African Green Federation; Member, Global Greens), [facebook.com/EcologicalPartyOfUgandaepu/](https://facebook.com/EcologicalPartyOfUgandaepu/)
- Zambia: Green Party of Zambia (Member, African Green Federation; Member, Global Greens), [facebook.com/ZambiaGreens/](https://facebook.com/ZambiaGreens/)
- Zimbabwe: Green Party of Zimbabwe (Member, African Green Federation; Member, Global Greens), [facebook.com/ZimbabweGreenParty](https://facebook.com/ZimbabweGreenParty)

### *Asia Pacific*

- Australia: Australian Greens (Member, Asia-Pacific Greens Federation; Member, Global Greens), [greens.org.au/](https://greens.org.au/)
- Fiji: Green Party of Fiji (dissolved 2013)

- India: Uttarakhand Parivartan Party (UKPP) (Member, Asia-Pacific Greens Federation; Member, European Greens; Member, Global Greens), [ukpp.org/](http://ukpp.org/). Green Party of India, [greenparty.in](http://greenparty.in)
- Indonesia: Partai Atjeh Hijau (Associate Member, Global Greens), [facebook.com/AtjehGreenParty/](https://facebook.com/AtjehGreenParty/). Partai Hijau Indonesia (Associate Member, Global Greens), [facebook.com/IndonesiaGreenParty/](https://facebook.com/IndonesiaGreenParty/). Sarekat Hijau (Indonesian Green Union) (Associate Member, Global Greens), [shi.or.id](http://shi.or.id)
- Japan: Midori no Mirai/Greens Japan (Member, Asia-Pacific Greens Federation; Member, Global Greens), [greens.gr.jp/](http://greens.gr.jp/)
- Korea, Republic of (South Korea): Green Party Korea (Member, Asia-Pacific Greens Federation; Member, Global Greens), [kgreens.org/](http://kgreens.org/)
- Mongolia: Green Party of Mongolia (Member, Asia-Pacific Greens Federation; Member, Global Greens), [facebook.com/MongoliinNogoonNam/](https://facebook.com/MongoliinNogoonNam/)
- Nepal: Green Party Nepal (Member, Asia-Pacific Greens Federation; Member, Global Greens), [facebook.com/greenpartynepal/](https://facebook.com/greenpartynepal/)
- New Zealand: Green Party of Aotearoa New Zealand (Member, Asia-Pacific Greens Federation; Member, Global Greens), [greens.org.nz/](http://greens.org.nz/)
- Pakistan: Pakistan Green Party (Member, Asia-Pacific Greens Federation; Member, Global Greens), [pakistangreenparty.org](http://pakistangreenparty.org)
- Philippines: Philippine Green Party (Partido Kalikasan), [facebook.com/greens.ph](https://facebook.com/greens.ph)
- Taiwan: Green Party Taiwan (Member, Asia-Pacific Greens Federation; Member, Global Greens), [greenparty.org.tw/](http://greenparty.org.tw/). Trees Party Taiwan (Member, Asia-Pacific Greens Federation; Member, Global Greens), [treesparty.tw](http://treesparty.tw)

### *South America, Central America, and the Caribbean*

- Argentina: Partido Verde (Member, Global Greens), [partidoverde.com.ar/noticias-2/](http://partidoverde.com.ar/noticias-2/)
- Bolivia: Partido Verde Ecologista (Member, Global Greens), [partidoverdebolivia.org/](http://partidoverdebolivia.org/)
- Brazil: Partido Verde do Brasil (Member, Global Greens), [pv.org.br/](http://pv.org.br/)
- Chile: Partido Ecologista Verde de Chile (Member, Global Greens), [partidoecologista.cl/](http://partidoecologista.cl/)
- Colombia: Partido Alianza Verde de Colombia (Member, Global Greens), [partidoverde.org.co/](http://partidoverde.org.co/)
- Costa Rica: Partido Verde Ecologista de Costa Rica, [partidoverdeecologista-cr.yolasite.com](http://partidoverdeecologista-cr.yolasite.com)
- Dominican Republic: Partido Socialista Verde, [pasoverd.org/](http://pasoverd.org/)
- Peru: Alternativa Verde de Peru (Member, Global Greens), [alternativa-verde.com/peru/](http://alternativa-verde.com/peru/)

Venezuela: Movimiento Verde Ecológico de Venezuela (Member, Global Greens), [movimientoecologicodevenezuela.blogspot.com](http://movimientoecologicodevenezuela.blogspot.com)

### *Middle East*

Iran: Green Party of Iran (operates outside of Iran), [iran-e-sabz.org/index.html](http://iran-e-sabz.org/index.html)

Israel: Ha-Yerukim, [green-party.org.il/](http://green-party.org.il/)

Lebanon: Green party of Lebanon (Member, Asia-Pacific Greens Federation; Member, Global Greens), [greenpartylebanon.org/](http://greenpartylebanon.org/)

### *Europe and Russia*

Albania: Albania Te Gjëlberit/Greens of Albania (Full Member of the European Green Party since 2008; Member, Global Greens), [pgj.al/](http://pgj.al/)

Andorra: Andorra Partit Verds d'Andorra (Full Member of the European Green Party since 2010)

Austria: Die Grünen (Full Member of the European Green Party since 1993; Member, Global Greens), [gruene.at/](http://gruene.at/)

### *State (Länder)-Level Green Parties*

Bürgenland: [noe.gruene.at](http://noe.gruene.at)

Kärnten: [kaernten.gruene.at](http://kaernten.gruene.at)

Niederösterreich: [noe.gruene.at](http://noe.gruene.at)

Oberösterreich: [ooe.gruene.at](http://ooe.gruene.at)

Salzburg: [salzburg.gruene.at](http://salzburg.gruene.at)

Steiermark: [stmk.gruene.at](http://stmk.gruene.at)

Tirol: [tirol.gruene.at](http://tirol.gruene.at)

Vorarlberg: [vorarlberg.gruene.at](http://vorarlberg.gruene.at)

Wien: [wien.gruene.at](http://wien.gruene.at)

Azerbaijan: Azərbaycan Yaşillər Partiyası (Associate Member of the European Green Party since November 2012; Associate Member, Global Greens), [facebook.com/Azərbaycan-Yaşillər-Partiyası-Green-Party-of-Azerbaijan-650606134956783/](https://facebook.com/Azərbaycan-Yaşillər-Partiyası-Green-Party-of-Azerbaijan-650606134956783/)

Belarus: Bielaruskaja Partyja “Zialonye” (Associate Member of the European Green Party since May 2013; Associate Member, Global Greens), [belgreens.org](http://belgreens.org)

Belgium: Ecolo (Full Member of the European Green Party since 1993; Member, Global Greens), [ecolo.be/](http://ecolo.be/). Groen (Full Member of the European Green Party since 1993; Member, Global Greens), [groen.be](http://groen.be)

- Bulgaria: Zelena Partiya v Bulgariya/Green Party Bulgaria (Full Member of the European Green Party since 1993; Member, Global Greens), [greenparty.bg](http://greenparty.bg). Zelenite (Full Member of the European Green Party since 2013), [izbori.zelenite.bg/](http://izbori.zelenite.bg/)
- Croatia: ORaH (Održivi razvoj Hrvatske) (Candidate Member of the European Green Party since Nov. 2014; Candidate Member, Global Greens), [orah.hr/](http://orah.hr/)
- Cyprus: Kinima Oikologon Periballontiston/Cyprus Green Party (Full Member of the European Green Party since 1998; Member, Global Greens), [cyprusgreens.org/](http://cyprusgreens.org/)
- Czech Republic: Strana Zelenych (Full Member of the European Green Party since 1997; Cyprus), [zeleni.cz/](http://zeleni.cz/)
- Denmark: Alternativet, [alternativet.dk/en](http://alternativet.dk/en). Socialistisk Folkeparti (Full Member of the European Green Party since 2014; Associate Member, Global Greens), [f.dk/](http://f.dk/)
- Estonia: Eesti Rohelised (Full Member of the European Green Party since 1993; Member, Global Greens), [erakond.ee](http://erakond.ee)
- European Union: European Green Party (established 2004), [european-greens.eu/](http://european-greens.eu/)
- Finland: Vihreät/De Gröna (Full Member of the European Green Party since 1993; Member, Global Greens), [vihreat.fi/en](http://vihreat.fi/en)
- France: Europe Ecologies/Les Verts (Full Member of the European Green Party since 1993; Member, Global Greens), [eelv.fr/](http://eelv.fr/)
- Georgia: Sakartvelo's Mtsvaneta Partia/Greens Party of Georgia (Full Member of the European Green Party since 1993; Member, Global Greens), Internet archive: [web.archive.org/web/20140112135248/greensparty.ge/en/index.php](http://web.archive.org/web/20140112135248/greensparty.ge/en/index.php)
- Germany (est. 1980) Bündnis '90/Die Grünen (Full Member of the European Green Party since 1993: Member, Global Greens), [gruene.de](http://gruene.de)

*State (Länder)-Level Green Parties*

- Baden-Württemberg (est. 1979): [gruene-hamburg.de](http://gruene-hamburg.de)
- Bayern (est. 1979): [ichwill.gruene-bayern.de](http://ichwill.gruene-bayern.de)
- Berlin (est. 1993 out of fusion of Alternativen Liste für Demokratie und Umweltschutz [1978] and Bündnis 90): [gruene.berlin/partei](http://gruene.berlin/partei)
- Brandenburg (est. 1993): [gruene-brandenburg.de/startseite/](http://gruene-brandenburg.de/startseite/)
- Bremen (est. 1973): [gruene-fraktion-bremen.de/start/](http://gruene-fraktion-bremen.de/start/)
- Hamburg (est. 1979): [gruene-hamburg.de](http://gruene-hamburg.de)
- Hessen (est. 1979): [gruene-hessen.de](http://gruene-hessen.de)
- Mecklenburg-Vorpommern (est. 1993): [gruene-mv.de/start/](http://gruene-mv.de/start/)
- München (est. 1979): [gruene-muenchen.de](http://gruene-muenchen.de)
- Niedersachsen (est. 1993): [gruene-niedersachsen.de](http://gruene-niedersachsen.de)

Nordrhein Westfalen (est. 1979): [gruene-nrw.de](http://gruene-nrw.de)

Rheinland Pfalz (est. 1979): [gruene-rlp.de/startseite/](http://gruene-rlp.de/startseite/)

Saarland (est. 1979): [gruene-saar.de](http://gruene-saar.de)

Sachsen (1991): [gruene-sachsen.de/startseite/](http://gruene-sachsen.de/startseite/)

Sachsen Anhalt (est. 1993): [gruene-lsa.de](http://gruene-lsa.de)

Schleswig-Holstein (est. 1980): [sh-gruene.de](http://sh-gruene.de)

Thüringen (1993): [gruene-thl.de](http://gruene-thl.de)

Greece: Oikologoi Prasinoi /Ecologist Greens (Full Member of the European Green Party since 1994; Member, Global Greens), [ecogreens-gr.org/cms/](http://ecogreens-gr.org/cms/)

Hungary: Lehet Mas A Politika (Full Member of the European Green Party since 2011; Member, Global Greens), [lehetmas.hu/](http://lehetmas.hu/)

Ireland: Irish Green Party/Comhaontas Glas (Full Member of the European Green Party since 1993; Member, Global Greens), [greenparty.ie/](http://greenparty.ie/)

Italy: Federazione die Verdi (Full Member of the European Green Party since 1993; Member, Global Greens), [verdi.it](http://verdi.it). Verdi-Grüne-Vërc (Candidate Member since 2017; Member, Global Greens), [verdi.bz.it](http://verdi.bz.it)

Kosovo: Partia e te Gjelberve te Kosoves, [facebook.com/Partia-e-te-Gjelberve-te-Kosoves-PGJK-175978559441174/](https://facebook.com/Partia-e-te-Gjelberve-te-Kosoves-PGJK-175978559441174/)

Latvia: Lativijas Zala Partija (Full Member of the European Green Party since 2001; Member, Global Greens), [zp.lv/](http://zp.lv/)

Luxembourg: déi gréng (Full Member of the European Green Party since 1993; Member, Global Greens), [greng.lu/](http://greng.lu/)

Macedonia: Demokratska Obnova na Makedonija (Full Member of the European Green Party since 2017; Member, Global Greens), [dom.org.mk](http://dom.org.mk)

Malta: Alternattiva Demokratika (Democratic Alternative) (Full Member of the European Green Party since 1993; Member, Global Greens), [alternattiva.org//](http://alternattiva.org//)

Moldova: Partidul Ecologist (Full Member of the European Green Party since 2008; Member, Global Greens), [greenparty.md/](http://greenparty.md/)

Netherlands: Groenlinks (Full Member of the European Green Party since 1993; Member, Global Greens), [groenlinks.nl/](http://groenlinks.nl/). De Groenen, [degroenen.nl/](http://degroenen.nl/)

Norway: Miljøpartiet De Grønne (Full Member of the European Green Party since 1993; Member, Global Greens), [mdg.no/](http://mdg.no/)

Poland: Zieloni (Full Member of the European Green Party since 2005; Member, Global Greens), [partiazieloni.pl/](http://partiazieloni.pl/)

Portugal: Partido Ecologista Os Verdes (Full Member of the European Green Party since 1993; Member, Global Greens), [osverdes.pt/](http://osverdes.pt/)

Romania: Partidul Verde (Full Member of the European Green Party since 1999; Member, Global Greens), [partidulverde.ro/](http://partidulverde.ro/)

Russia: Зеленая Россия/Green Russia (Associate Member of the European Green Party since 2016; Associate Member, Global Greens), [rus-green.ru](http://rus-green.ru). Russian Ecological Party Green (a political NGO that unites Russian citi-

- zens on environment), [greenparty.ru](http://greenparty.ru). Zelenaya Alternativa (GROZA) (Associate Member of the European Green Party since 2016; Associate Member, Global Greens)
- Slovakia: Strana Zelenych na Slovensku, [tranazelenychslovenska.sk/](http://tranazelenychslovenska.sk/)
- Slovenia: Stranka Mladih Slovenije (Full Member of the European Green Party since 2006; Member, Global Greens), [sms.si/](http://sms.si/)
- Spain: (Catalonia) Iniciativa per Catalunya Verds (Full Member of the European Green Party since 2006; Member, Global Greens), [iniciativa.cat/](http://iniciativa.cat/). EQUO (Full Member of the European Green Party since 2016; Member, Global Greens), [partidoequo.es/](http://partidoequo.es/)
- Sweden: Miljöpartiet de Gröna (Full Member of the European Green Party since 1993; Member, Global Greens), [mp.se/](http://mp.se/)
- Switzerland: Grüne / Les Verts (Full Member of the European Green Party since 1993; Member, Global Greens), [gruene.ch/](http://gruene.ch/)
- Turkey: Green Left Party/Yesiller ve Sol Gelecek Partisi (Candidate Member of the European Green Party since November 2012; Candidate Member, Global Greens), [yesilsolparti.com](http://yesilsolparti.com)
- Ukraine: Partija Zelenych Ukrajin/Party of Greens of Ukraine (Full Member of the European Green Party since 1993; Member, Global Greens), [greenparty.org.ua/](http://greenparty.org.ua/)
- United Kingdom (England and Wales): Green Party of England and Wales (Full Member of the European Green Party since 1993; Member, Global Greens), [greenparty.org.uk/](http://greenparty.org.uk/)

### *Regional Parties*

- Eastern Green Party: [eastern.greenparty.org.uk](http://eastern.greenparty.org.uk)
- East Midlands: [eastmidlands.greenparty.org.uk](http://eastmidlands.greenparty.org.uk) London: [london.greenparty.org.uk](http://london.greenparty.org.uk)
- Northeast: [neengland.greenparty.org.uk](http://neengland.greenparty.org.uk)
- Northwest: [northwest.greenparty.org.uk](http://northwest.greenparty.org.uk)
- Southeast: [segreens.com](http://segreens.com)
- Southwest: [southwest.greenparty.org.uk](http://southwest.greenparty.org.uk)
- Wales/Plaid Werdd Cymru: [wales.greenparty.org.uk](http://wales.greenparty.org.uk)
- West Midlands: [westmidlands.greenparty.org.uk](http://westmidlands.greenparty.org.uk)
- Yorkshire and the Humber: [yorkshireandhumber.greenparty.org.uk](http://yorkshireandhumber.greenparty.org.uk)
- Northern Ireland: Green Party of Northern Ireland, [greenpartyni.org/](http://greenpartyni.org/)
- Scotland: Scottish Greens (Full Member of the European Green Party since 1994; Member, Global Greens), [scottishgreens.org.uk/](http://scottishgreens.org.uk/)

### *North America*

*Canada*

Green Party of Canada (Member, Global Greens), [greenparty.ca/en](http://greenparty.ca/en)

Green Party of (Province):

Alberta (est. 2011): [greenpartyofalberta.ca](http://greenpartyofalberta.ca)

British Columbia (est. 1983): [bcgreens.ca](http://bcgreens.ca)

Manitoba (est. 1998): [en.pvq.qc.ca](http://en.pvq.qc.ca)

Nova Scotia (est. 2006): [greenpartyns.ca](http://greenpartyns.ca)

Ontario (est. 1983): [gpo.ca](http://gpo.ca)

Prince Edward Island (est. 2005): [greenparty.pe.ca](http://greenparty.pe.ca)

Quebec (Parti Vert du Quebec) (est. 2001): [en.pvq.qc.ca](http://en.pvq.qc.ca)

Saskatchewan (est. 1998): [saskgreen.ca](http://saskgreen.ca)

Mexico: Green Ecological Party/Partido Verde Ecologista (PVEM; Member, Global Greens), [partidoverde.org.mx](http://partidoverde.org.mx)

*United States*

Green Party US (est. 2001), [gp.org](http://gp.org)

Green Party of (State):

Alabama: [facebook.com/ALGreenParty](https://facebook.com/ALGreenParty)

Alaska: [facebook.com/Green-Party-of-Alaska-145579755463442/](https://facebook.com/Green-Party-of-Alaska-145579755463442/)

Arizona: [azgp.org/](http://azgp.org/)

Arkansas: [greenpartyofarkansas.org](http://greenpartyofarkansas.org)

California: [cagreens.org](http://cagreens.org)

Colorado: [coloradogreenparty.org](http://coloradogreenparty.org)

Connecticut: [ctgreenparty.org](http://ctgreenparty.org)

Delaware: [gpde.us](http://gpde.us)

District of Columbia Statehood Green Party: [dcstategreens.org](http://dcstategreens.org)

Florida: [gpfl.org](http://gpfl.org)

Georgia: [georgiagreenparty.org](http://georgiagreenparty.org)

Hawai'i: [greenpartyofhawaii.org](http://greenpartyofhawaii.org)

Idaho: [idgreens.org](http://idgreens.org)

Illinois: [ilgp.org](http://ilgp.org)

Indiana: [greenpartyin.com](http://greenpartyin.com)

Iowa: [iowagreens.org](http://iowagreens.org)

Kansas: [facebook.com/KsGreenParty/](https://facebook.com/KsGreenParty/)

Kentucky: [kygreenparty.org](http://kygreenparty.org)

Louisiana: [lagreens.org](http://lagreens.org)

Maine: [mainegreens.org](http://mainegreens.org)

Maryland: [mdgreens.org](http://mdgreens.org)

Massachusetts (Green-Rainbow Party): [green-rainbow.org](http://green-rainbow.org)

Michigan: [migreenparty.org](http://migreenparty.org)



Minnesota: [Mngreens.nationbuilder.com](http://Mngreens.nationbuilder.com)  
 Missouri: [missourigreenparty.org](http://missourigreenparty.org)  
 Montana: [mtgreenparty.org](http://mtgreenparty.org)  
 Nebraska: [nebraskagreens.org](http://nebraskagreens.org)  
 Nevada: [nvgreenparty.org](http://nvgreenparty.org)  
 New Hampshire: [facebook.com/GraniteGreens/](https://facebook.com/GraniteGreens/)  
 New Jersey: [gpnj.org](http://gpnj.org)  
 New Mexico: [greenpartyofnm.org](http://greenpartyofnm.org)  
 New York: [gpony.org](http://gpony.org)  
 North Carolina: [ncgreenparty.org](http://ncgreenparty.org)  
 North Dakota and South Dakota: [facebook.com/greenpartynd](https://facebook.com/greenpartynd)  
 Ohio: [ohiogreens.org](http://ohiogreens.org)  
 Oklahoma: [okgreens.wordpress.com](http://okgreens.wordpress.com)  
 Oregon: [pacificgreens.org](http://pacificgreens.org)  
 Pennsylvania: [gpofpa.org](http://gpofpa.org)  
 Rhode Island: [rigreens.org](http://rigreens.org)  
 South Carolina: [scgreenparty.org](http://scgreenparty.org)  
 South Dakota (see North Dakota above)  
 Tennessee: [greenpartyoftennessee.org](http://greenpartyoftennessee.org)  
 Texas: [txgreens.org](http://txgreens.org)  
 Utah: [greenpartyutah.com](http://greenpartyutah.com)  
 Vermont: [vermontgreenparty.org](http://vermontgreenparty.org)  
 Virginia: [vagreennparty.org](http://vagreennparty.org)  
 Virgin Islands: [facebook.com/VirginIslandsGreenParty/](https://facebook.com/VirginIslandsGreenParty/)  
 Washington: [greenpartywashington.org](http://greenpartywashington.org)  
 West Virginia (Mountain Party of WV): [mountainpartywv.com](http://mountainpartywv.com)  
 Wisconsin: [wisconsinngreenparty.org](http://wisconsinngreenparty.org)  
 Wyoming: [facebook.com/WYGreenParty/](https://facebook.com/WYGreenParty/)

### **GLOBAL CONFERENCES, DECLARATIONS, AND INTERNATIONAL AGREEMENTS**

African Convention on the Conservation of Nature and Natural Resources,  
[edac.ciesin.org/entri/texts/african.conv.conserva.1969.htmlC40](http://edac.ciesin.org/entri/texts/african.conv.conserva.1969.htmlC40)  
 Basel Convention on the Transboundary Movement of Hazardous Wastes  
 and Their Disposal, [basel.int](http://basel.int)  
 Convention on Biological Diversity, [cbd.int/](http://cbd.int/)  
 Convention on Long-Range Transboundary Air Pollution, [unece.org/env/  
lrtap/lrtap\\_h1.html](http://unece.org/env/lrtap/lrtap_h1.html)  
 Convention to Combat Desertification (CCD), [unccd.int/en/Pages/de-  
fault.aspx](http://unccd.int/en/Pages/default.aspx) Kyoto Protocol, Paris Agreement

- Minamata Convention on Mercury, [mercuryconvention.org](http://mercuryconvention.org)
- Montreal Protocol on Substances That Deplete the Ozone Layer, [ozone.unep.org/en/treaties-and-decisions/montreal-protocol-substances-deplete-ozone-layer](http://ozone.unep.org/en/treaties-and-decisions/montreal-protocol-substances-deplete-ozone-layer)
- Ramsar Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, [ramsar.org/](http://ramsar.org/)
- Sustainable Development Goals, [sustainabledevelopment.un.org/](http://sustainabledevelopment.un.org/)
- United Nations Conference on Environment and Development (UNCED), [un.org/geninfo/bp/enviro.html](http://un.org/geninfo/bp/enviro.html)
- United Nations Conference on Sustainable Development (Rio de Janeiro, Brazil, 2012), [uncsd2012.org/](http://uncsd2012.org/), [un.org/en/sustainablefuture/](http://un.org/en/sustainablefuture/)
- United Nations Conference on the Human Environment (Stockholm, Sweden 1972), [unep.org/Documents.Multilingual/default.asp?documentid=97&1=en](http://unep.org/Documents.Multilingual/default.asp?documentid=97&1=en) (UNEP report), [unep.org/Documents.Multilingual/Default.asp?DocumentID=97&ArticleID=1503](http://unep.org/Documents.Multilingual/Default.asp?DocumentID=97&ArticleID=1503) (Declaration of the United Nations Conference on the Human Environment)
- United Nations Framework Convention on Climate Change, [unfccc.int/2860.php](http://unfccc.int/2860.php)

## DOCUMENTARIES AND FILMS

- The Age of Stupid.* The film is set in a bleak future where an archivist looks back into the past to old films from 2008 to try to understand why humankind failed to address climate change. Directed by Franny Armstrong. Written by Adela Pickles. Spanner Films. Released 2009.
- American Experience: Rachel Carson.* This documentary tells of the life of Rachel Carson, one of the pioneers of the modern environmental movement who helped awaken the world to the dangers of pesticide use with her book *Silent Spring*. Directed by Michelle Ferrai. Distributed by PBS. Released: 24 January 2017.
- An Inconvenient Sequel.* A decade after his first successful documentary, Al Gore produced this documentary, which explores how our economies are wreaking havoc on the earth's climate and what this could mean. The documentary also provides ideas on actions that can bring about change. Directed by Bonni Cohen and Jon Shenk. Produced by Jeff Skoll, Richard Berge, and Diane Weyermann. Written by Al Gore. Production Co: Paramount Pictures. Release date: 19 January 2017.

- An Inconvenient Truth.* Former U.S. vice president Al Gore's documentary about the impacts humans are having on the earth's climate. Directed by Davis Guggenheim. Produced by Laurie David, Lawrence Bender, and Scott Z. Burns. Written by Al Gore. Production Co.: Lawrence Bender Production, Participant Productions. Release date: 24 May 2006.
- Before the Flood.* This film introduces the audience to climate change. Leonardo DiCaprio, UN Messenger of Peace, shows the viewer the impacts of climate change in areas around the world. It discusses the lobbyists who are behind many climate skeptics in the United States, looks at the actions various countries are taking to address climate change, and explores the many challenges that remain. Directed by Fisher Stevens. Produced by Leonardo DiCaprio, Fisher Stevens, Brett Ratner, Jennifer Davisson Killo-ran, Trevor Davidoski, and James Packer. Executive Producers: Martin Scorsese, Mark Monroe, Zara Duffy, Adam Bardach. Produced by Appian Way Productions, RatPac-Dune Entertainment. Distributed by National Geographic. Release date: 21 October 2016.
- Blue Vinyl* A documentary about the efforts of a woman to find environmentally sound construction materials for her parent's home. The film highlights the negative effects of polyvinyl chloride and seeks to trigger a consumer movement against PVCs. Directed by Judith Helfand and Daniel Gold. Produced by Julia Parker and Lisa Heller. Working Films, 2002.
- Burning the Future: Coal in America.* This film examines the environmental-ly devastating practice of the mountain-top mining for coal that is occurring in Appalachia. Directed by David Novak. Produced by Alexis Zoullas and David Novack. Written by David Novack and Richard Hankin. Executive producer: C. J. Follini. Released in 2008 on the Sundance Channel. Rereleased in 2012 by PBS.
- Cadillac Desert: Water and the Transformation of Nature.* This four-part documentary explores the transformation of nature through diverting and using of rivers and waterways, building dams, and piping water into deserts. It explores the rise of Los Angeles, which was only possible as a result of water diversion. The money and politics behind water diversions raise troubling questions about the sustainability of water policies. Three parts focus on the American Midwest, and the fourth explores water politics internationally. Directed by Jon Else and Linda Harrar. Produced by Sandra Itkoff. Written by Jon Else, Sandra Postel, and Marc Reisner. KTEH Trans Pacific TV. PBS Home Video. Release date: 24 June 1997.
- Chasing Ice.* A documentary with breathtaking photography by James Ballog and his team of a rapidly changing Arctic landscape. Time-lapse photography shows a region being dramatically impacted by climate change. Directed by Jeff Orlowski. Produced by Paula DuPre' Pesemen and Jerry Aronson. Written by Mark Monroe. Distributed by Submarine Deluxe. Released 16 November 2012.

*Chemical Valley.* This film examines a community struggling with questions of human health, chemicals, and jobs in their community of Khanawa in the aftermath of the Bhopal chemical disaster in India. Film by Mimi Pickering and Anne Lewis Johnson. Appalshop Documentary. BPS 1991.

*Children of the Amazon.* This film looks at the human side of tropical-rainforest destruction and the efforts to stop the deforestation led by Chico Mendes and indigenous peoples of the forests. Directed by Denise Zmekhol. Written by Denise Bostrom, Ellen Bruno, Olivia Crawford, and Michael Moore. Produced by Jabe Greenberg and Denise Zmekhol. Independent Television Service. Released 2008.

*Climate of Doubt.* Looks at the rise of climate skepticism with interviews with key climate skeptics in the United States and how the skepticism has planted seeds of doubt regarding climate change in the United States. Produced by Catherine Upin. Written by Catherine Upin and John Hockenberry. WBGH Boston. PBS, Frontline 2012.

*The Cove.* A documentary film that follows activists who enter a cove in Japan where dolphins are brutally killed for their meat. Directed by Louie Psihoyos. Produced by Fisher Stevens, Paula DuPre Pesmen. Written by Mark Monroe. Sundance Films. Release date: 31 July 2009.

*Cowspiracy.* The documentary examines the horrors of factory farming and the contribution it makes to climate change through converting forests to agricultural land to grow the food to feed the animals; the methane released by animals into the atmosphere; and the nitrous oxide released into rivers. It also examines the murders of land activists. The film also critiques the environmental movement for ignoring the problem. The film was funded through cloud financing via Indiegogo. Produced and directed by Kip Anderson and Keegan Kuhn. Executive producer Leonardo di Caprio, 2014.

*Crude.* A documentary film that follows a class action lawsuit by Ecuadorians living in the Amazonian rainforest against the Chevron Corporation in Ecuador. The film was directed and produced by Joe Berlinger, along with Michael Bonfiglio, J. R. DeLeon, and Richard Stratton. It was released by Sundance Films on 18 January 2009.

*The Decade of Destruction.* This is a four-part series chronicling the destruction of the Amazon rainforest. The titles in the series are: *In the Ashes of the Forest—Part I*; *In the Ashes of the Forest—Part II*; *Killing for Land*; *Mountains of Gold*; and, *The Killing of Chico Mandes*. Directed by Adrian Cowell. Bull Frog Films, 1990.

*Disobedience.* This documentary is about the power of civil disobedience. It starts with the uprising that ended the dictatorship of Ferdinand Marcos in the Philippines, a dictatorship with strong ties to the energy industry. It discusses how ordinary people with vision make sacrifices for a common cause. It goes on to examine civil-disobedience efforts to keep oil in the

ground challenging the tar sands oil extraction in Canada; citizens protests (500,000 people in a human chain) against a coal-fired power plant in Turkey; and actions against lignite mining in Germany. Naomi Klein appears in the movie. 350.org. Director: Kelly Nyks. A Disobedience Production, PF Pictures. 2016. Available at [350.org/videos/](http://350.org/videos/).

*Disruption*. This documentary examines scientific understandings of climate change and the actions involved in mobilizing the global People's Climate March. 350.org. Directed by Kelly Nyks and Jared P. Scott. Disobedience Productions, PF Pictures. 2016. Available at [350.org/videos/](http://350.org/videos/).

*Do the Math*. A video examining the use of divestment as a tool to weaken the power of the fossil fuel industry. 350.org. Directed by Kelly Nyks and Jared P. Scott. PF Pictures, 2013. Available at [350.org/videos/](http://350.org/videos/).

*Earth and the American Dream*. Looks at the industrialization of the United States, the rise of mass consumerism, and its impacts on the environment. Directed by Bill Couturié. HBO Documentary, 1992.

*Earth Days*. Tells the history of the U.S. environmental movement starting with pioneer Rachel Carson and subsequent key individuals, such as Stewart Udall, Paul Ehrlich, Dennis Meadows, and numerous political leaders and scientists. Directed, produced, and written by Robert Stone. Distributed by Zeitgeist Films. Release date: 2 April 2009 (Wisconsin Film Festival), 14 August 2009.

*The 11th Hour*. The film examines what is happening to the planet's life systems: global warming, deforestation, mass species extinction, and ocean decline. Directed by Nadia Connors and Leila Connors Petersen. Produced by Leonardo DiCaprio, Leila Connors Petersen, Chuck Castleberry, and Brian Gerber. Written by Nadia Connors, Leonardo DiCaprio, and Leila Connors Petersen. Distributed by Warner Independent Pictures. Released in 2007.

*End of the Line—Where Have All the Fish Gone*. The film looks at the declining state of ocean fisheries as a result of overfishing and the powers that are behind this devastating trend. It considers what this will mean for various fish species and how it will contribute to starvation and unemployment if policies are not changed. Directed by Rupert Murray. Written by Charles Clover. National Geographic. Blue Marine Foundation. Released 2009.

*A Fierce Green Fire: The Battle for a Living Planet*. This documentary examines the rise of the global environmental movement starting with earlier visionaries John Muir and David Brower and the Sierra Club's battle to prevent the building of a dam in the Grand Canyon. It also covers the fight led by Lois Gibbs to help the residents of Love Canal deal with toxic chemicals, Greenpeace's campaigns to save whales and seals, Chico Mendes and the Brazilian rubber tappers' efforts to save the Amazon

- rainforest, and Bill McKibber's efforts to address climate change. Directed and written by Mark Kitchell. Distributed by First Run Features, Bullfrog Films. Release date: 23 January 2012.
- Food, Inc.* Looks at the power of the agricultural industry and supermarket industry and the control they have over what we eat. The film calls on consumers to demand healthier and more sustainable food. Directed by Robert Kenner. Released in 2008.
- For Earth's Sake: The Life and Times of David Brower.* This portrait of David Brower introduces the viewer to the forces that led him to work at the Sierra Club and establish Friends of the Earth and the Earth Island Institute. Directed by John de Graaf. Produced by John De Graaf. Bullfrog Films. Released 1989.
- Gasland.* This video examines the impacts of fracking in Pennsylvania on the environment and the lives of people in the community. Directed, written, and narrated by Josh Fox. Distributed by New Video Group/HBO/International WOW Co., 2010.
- The Great Invisible.* A documentary film about the Deepwater Horizon oil rig explosion in 2010. Directed by Margaret Brown. Participant Media and Radius TWC. Gigantic Pictures Production. Released 2014.
- Green Fire: Aldo Leopold and a Land Ethic for Our Time.* This documentary explores Leopold's shaping of the modern conservation movement. Directed by Ann Dunsky and Steven Dunsky for the Aldo Leopold Foundation. Released in 2011.
- Greenpeace: Making a Stand.* This TV documentary looks at Greenpeace's start in Vancouver as an "eco-navy" that set out to save whales from slaughter. Directed by Leigh Badgley. Omni Films, 2006.
- Hot Politics.* A documentary about climate debates in U.S. politics. Directed by Peter Bull. Frontline, PBS, 24 April 2007.
- How to Change the World.* This documentary explores the birth of Greenpeace beginning with its protests against nuclear testing. It also shows how the group's leaders later split, leading to the formation of the Sea Shepherd Conservation Society. Directed and written by Jerry Rothwell. Produced by Al Morrow and Bous de Jong. Released in 2015.
- If a Tree Falls: A Story of the Earth Liberation Front.* The motivations, actions, and eventual arrests of members of the extremist Earth Liberation Front are the subject of this film. Directed by Marshall Curry. Produced by Marshall Curry and Sam Cullmann. Written by Marshall Curry and Matthew Hamacheck. Distributed by Oscilloscope Laboratories. Released in 2011.
- In Our Own Backyard: The First Love Canal.* Combines documentary footage with interviews of Love Canal residents and their experiences living in a community contaminated by a toxic waste dump. Directed by Lyn Corcoran. Bull Frog Films, 1982.

- Into the Sea.* This short documentary looks at runoff from Long Island homes and yards and its impact on the ocean. Directed by Mikey Detemple for Surfrider Foundation, 2016.
- Island President.* This film documents the efforts of the former president of the Maldives, Mohamed Nasheed, to raise global awareness of climate-induced sea level rise and push forward global policy action on climate change. Directed by Jon Shenk. Produced by Richard Berge and Bonni Cohen. Distributed by Samuel Goldwyn Films. Released on 1 September 2011.
- The Islands and the Whales.* Documents the interactions in a whaling community in the Faroe Islands between the whalers, anti-whaling activists, and scientists who find the whales are contaminated with mercury and PCBs. Directed by Mike Day. Intrepid Cinema, 2017.
- Just Do It: A Tale of Modern Day Outlaws.* The film documents environmental activists planning demonstrations and climate activism that goes beyond legal boundaries. Directed by Emily James. Left Field Films. 15 July 2011.
- Meet the Climate Skeptics.* This documentary explores climate skepticism and its political influence in Australia, examining how climate skeptics managed to stop the introduction of an emissions-trading system. Directed by Rupert Murray. Produced by BBC, 2011.
- Monumental: David Brower's Fight for Wild America.* A documentary about the life and work of David Brower and his struggle to preserve American wilderness. Directed by Keyy Duane. Loteria Films. Released 2009.
- Oil on Ice.* A television documentary that looks at plans for oil drilling in the Arctic National Wildlife Federation and at U.S. energy politics. Directed by Dale Djerassi and Bo Boudart. Release date: 31 May 2004.
- Pirate for the Sea.* A biographical documentary about Paul Watson, founder of the Sea Shepherd Conservation Society. Directed by Ron Colby. LB Films. Released 2009.
- The Plastic Age.* This short documentary featuring Pharrell Williams shocks with the drastic amount of plastic pollution collecting in the ocean. Produced by Jake Sumner. Written by Jake Sumner and Zach Neumeier. Executive Producer: Lucy Cooper. i-D magazine. An AllDayEveryDay Production. Released 2015.
- The Poisoned Dream: The Love Canal Nightmare.* A documentary about mothers who took on the U.S. government to deal with the eco-toxic pollution of their community. Their efforts led to changes in U.S. laws addressing toxic substances and polluted sites (Superfund Legislation). Directed by Kevin Matthews. 1997.
- Princess Mononoke.* This Japanese animation film set in the late Muromachi era (1336 to 1573) presents viewers with a lesson about resource abuse and the anger it brings to the gods of the forest. Directed and written by

Hayao Miyazaki. Animated by Studio Ghibli for Tokuma Shoten, Nippon Television Network and Dentsu and distributed by Toho. Release date: 12 July 1997.

*Taking Root: The Vision of Wangari Maathai.* This film traces the life of Wangari Maathai, who founded the Green Belt Movement in Kenya and was awarded numerous environmental prizes for her work. Her movement to have women plant trees became a fight for equity, justice, and the environment. Directed by Alan Dater and Lisa Merton. Marlboro Productions, Soundchef Studios. Release date: 14 April 2008.

*Time to Choose: Climate Change for Good.* This documentary film with its magnificent photography takes the viewer across the planet to witness the destruction human activities are causing on the planet and how this is contributing to climate change. The film intends to warn of looming runaway climate change and to persuade the viewer that it is time to choose a new path of development. Spectacular views of nature are contrasted with the blight caused by lignite mining in Germany and deforestation in Indonesia. The film was released in 2015. It was directed by Charles Ferguson and written by Ferguson and Chad Beck.

*Trashopolis.* A television series by ZDF Enterprises that explores trash in cities around the world and how it is dealt with. 2010–2011.

*Under the Dome.* A self-financed documentary about chronic air pollution in China. The film was made by Chai Jing, a former Central Television journalist. It was viewed tens of millions of times in the week after its release and was subsequently banned by the Chinese government. Released 28 February 2015.

*Wackersdorf.* A documentary film telling the story of the movement in Wackersdorf in Bavaria, Germany, to prevent the clearing of a forest to build a nuclear fuel reprocessing plant. Wackersdorf played a critical role in the rise of the anti-nuclear movement in Germany. Directed by Oliver Haffner. Produced by Ingo Fliess. Neues Deutsches Kino. Released in 2018.

*Waste Land.* This award-winning documentary follows Vik Muniz, an artist who travels to the world's largest landfill in Rio de Janeiro and works with pickers of recyclable materials to make works of art. Directed by Lucy Walker, João Jarim, and Karen Harley. Executive production: Fernando Meirelles City of God. O2 Filmes, Intelligen Media, Almega Projects. Release date: 24 January 2010.

*We All Live Downstream.* A three-minute film by International Rivers that looks at the impact of a century of dam building that has resulted in over 50,000 large dams that have made it harder for many people to make a living, buried relics, and covered territory equal to the size of the United Kingdom. Directed by A. C. Warden and Karen Hirsch. Released on 7 November 2007.



*Wild by Law: The Rise of Environmentalism and the Creation of the Wilderness Act.* A short documentary about Aldo Leopold, Bob Marshall, and Howard Zahniser and their roles in bringing about the American Wilderness Act. Directed by Diane Garey and Lawrence R. Hott. Written by Ken Chowder. Released 1991.

*Woman at War.* Set in Iceland, the film is about a woman who is a choir conductor who has plans to adopt a Ukrainian child but who is also an eco-terrorist set on stopping the Rio Tinto Aluminum plant from destroying the Icelandic environment. Directed by Benedikt Erlingsson. Produced by Benedikt Erlingsson, Carine Leblanc, and Marianne Slot. Written by Benedikt Erlingsson and Ólafu Egill Egilsson. Release date: 12 May 2018.

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