

History

Who Borneo belongs to has been a key question for much of the past 1500 years; internal contenders, neighbouring islands and Europeans all staked claims. Far from resolving the question, 20th-century nationhood left the island divided and created new levels of conflict.

SUNDALAND TO SRIVIJAYA

Geologists believe Borneo's land mass was joined to the rest of Southeast Asia 2.5 million years ago, as part of a continent called Sundaland. About 10,000 years ago, seas rose and Borneo became a large, remote island.

Despite separation from the mainland, Borneo retained contact with the outside world. Migrants arrived some 3000 years ago, probably from southern China, mixing with the descendants of the original owner of a 40,000-year-old skull discovered in Niah Caves to form some of Borneo's indigenous groups.

Traders from India and China began visiting Borneo as a sideshow to their bilateral commerce around the 1st century AD. Borneo's forest products including birds nests (which Chinese prized for soup and medicine), black pepper and animal skins were exchanged for textiles, beads and Chinese porcelain. From about 500 AD, Chinese traders began settling along Borneo's coasts.

Traders also introduced Hinduism and Buddhism to Borneo. South Kalimantan's Museum Lambung Mangkurat (see p264) displays artefacts of that influence. Traditional social principles known as *adat* are also a Hindu legacy (see p30).

Sumatra's Hindu-Buddhist kingdom of Srivijaya rose during the 7th century AD, and its influence extended to Borneo. Srivijaya controlled much of Southeast Asia's trade through command of the Strait of Melaka. Merchants from Arabia, Persia and India brought goods to Srivijaya's coastal outposts in exchange for goods from China and local products.

In Srivijaya's time, Brunei emerged as Borneo's centre for China trade. Sumatran pioneers established additional settlements along Borneo's coast, broadening the empire's reach and bringing more traders to the island. When Srivijaya's 600-year run ended, more Malays migrated to Borneo.

KINGDOMS COME

The founding of Melaka in 1400 (see p26) refocused regional trade. This harbour on Malay peninsula's west coast is half-way between China and India. In addition to their goods, Indian traders carried Islam to Melaka. These Muslim practices mainly absorbed, rather than erased, prevailing Hindu and animist customs. Muslims in Borneo today predominantly practise

this more mild, tolerant form of Islam. Travellers may notice it in Borneo's more pluralistic societies, with fewer women in headscarves and continued adherence to some pre-Islamic traditions (see p36).

Through diplomacy, often cemented by marriage, Borneo's coastal sultanates turned toward Melaka and Islam. Brunei's sultan married a Melaka princess; Sharif Ali, a descendant of the Prophet Mohammed, married a Brunei royal and became sultan, introducing a legal system based on Islamic law.

By the late 15th century, Europeans sought a direct role in the rich Asian trade. Christopher Columbus failed to reach India by sailing west, but Portugal's Vasco da Gama found the way around Africa in 1498. In 1511, Portugal conquered Melaka in its bid to control the lucrative spice trade. Muslim merchants shunned Melaka after Portugal's takeover, moving much of their custom to Borneo's sultanates.

Brunei succeeded Melaka as the regional Islamic trade centre. Under Sultan Bolkia in the 16th century, Brunei was Borneo's most powerful kingdom. Its influence extended east to Luzon in the modern Philippines and on Borneo as far south as Kuching.

The sultanate let Portugal to establish a Brunei trading post to service its burgeoning spice trade in the Maluku. This link also helped check Spanish ambitions in the Philippines, but Brunei's reach exceeded its grasp. Facing a succession of rebellions, Brunei repeatedly turned to foreigners for help.

For assistance suppressing an uprising in 1701, Brunei ceded Sabah to the Sultan of Sulu (an island between Borneo and Mindanao). That cession is the basis for ongoing Philippine claims to Sabah. In the 19th century, a rebellion against Brunei led to a British foothold in Sarawak (see p24).

Brunei gave Britain a second front in Borneo more obliquely. In 1865, Brunei's ailing sultan leased Sabah to the American consul in Brunei. The rights eventually passed to an Englishman, Alfred Dent, who also received Sulu's blessing. In 1881, with London's support, Dent formed the British North Borneo Company, later called the Chartered Company, to administer the territory.

The prospect of further fragmentation led the nearly ruined sultanate to become a British protectorate in 1888. Ironically, its 19th-century status as a dependent paved Brunei's path to becoming Borneo's only independent state a century later.

THE EMPIRE(S) STRIKE BACK

Portugal's success in the spice trade and as a coloniser drew European imitators. The British and Dutch began sparring over Borneo in the 17th century, extending a regional rivalry that began in Java and spread to the Strait of Melaka.

To more effectively exploit the Asia trade, the Dutch government amalgamated competing merchant companies into the Vereenigde Oost-Indische

The name Borneo comes from foreigners, and is either a mispronunciation of Brunei or *buah nyior*, Malay for coconut; Malays call the island Kalimantan.

Archaeological finds in western Borneo include glass beads from the Roman Empire.

TIMELINE

2.5 million BC

Borneo is part of Sundaland, attached to mainland Southeast Asia. The rising seas of a geological separatist movement about 10,000 years ago transformed Borneo into the world's third-largest island.

2500–1000 BC

Migrants from mainland Asia bring Dongson culture techniques for rice farming, metallurgy and buffalo sacrifice to Borneo. With ancestors of the 40,000-year-old Niah Caves skull, they form many of Borneo's indigenous groups.

c 1st century AD

Chinese and Indian traders detour to Borneo. Egyptian geographer Ptolemy's uncannily accurate descriptions of Borneo likely came from Indian voyagers. By 500 AD, Chinese are settling in coastal present-day West Kalimantan.

600s–1200s

Sumatra's Hindu-Buddhist Srivijaya kingdom dominates Southeast Asia's sea trade. Under Srivijaya, ethnic Malays immigrate to Borneo. Modern social values known as *adat* are a Hindu legacy.

c 1400

Ibans migrate from West Kalimantan's Kapuas River valley to Sarawak, displacing Bidayuh. Some Ibans ally with coastal Malays to become 'Sea Dayak' pirates. Ibans will be Sarawak's last group to renounce head-hunting.

1445

Islam becomes the state religion of Melaka, Srivijaya's successor as Southeast Asia's trading power. Merchants spread a predominantly tolerant, mild form of Islam that accommodates existing traditions.

MEANWHILE, BACK IN THE JUNGLE...

While regional kingdoms and Europeans tried to get pieces of Borneo, the island's indigenous people were developing their own societies. In most cases, we know little about this history due to the lack of written records, particularly about forest tribes.

It's known that Iban Dayaks migrated from the mid-Kapuas River area in today's West Kalimantan to Sarawak around 1400. But it's not known why they moved. Tribal wars are believed to have been frequent with some groups, such as Kenyah and Ibans, pitted in traditional rivalries, but details are scarce.

More is known about Borneo's coastal sultanates, such as Brunei, which dominated northern Borneo before the Europeans came. These coastal states were usually established by envoys from kingdoms across the Indonesian archipelago, setting up trading posts, intermarrying with indigenous people, and outlasting or outgrowing their distant sponsors.

In the south, Banjarmasin emerged as the major political power among the Islamicised former Buddhist and Hindu minikingdoms. Ethnically, the Banjars are a mix of Dayak, Sumatran Malay, Javanese and Bugis. Royal intermarriage with Dayaks helped cement good relations. The sultanate adopted Islam under Pangeran Samudera shortly after Portugal's conquest of Melaka. By the 18th century, Banjarmasin's influence stretched coast to coast, from Sambas to Berau.

Today, regional royalty often remains a point of local pride, and residents expect tourists to visit the town's palace, now usually a royal museum. The Kutai dynasty palace-cum-museum in Tenggarong, East Kalimantan, (see p276) is Borneo's best.

Compagnie (VOC; United East India Company). The VOC established a diamond-trading outpost in Sambas on Kalimantan's northwest coast in 1610, but its focus soon shifted to spices. Britain operated through its East India Company (EIC), building a flourishing pepper trade from Borneo that aroused Dutch jealousies.

The rivals' Anglo-Dutch Treaty of 1824 carved the region into separate spheres of interest that were to become 20th-century national boundaries. The Dutch got what became Indonesia; Britain got the Malay peninsula and Singapore. (A legacy of the split is the more widespread use of English in Sabah and Sarawak than in formerly Dutch Kalimantan.) Britain did not include Borneo in the treaty, preferring its EIC concentrate on the Malay peninsula and Singapore, which it dubbed the Straits Settlements.

THE WHITE RAJAS

The Anglo-Dutch Treaty didn't end British interest in Borneo. Brunei's decline in the late 18th century led Sarawak to assert its independence. The region was emboldened by a flourishing trade in antimony, a metal used in medicines and as an alloying agent; *sarawak* means 'antimony' in Malay. Brunei's sultan dispatched his uncle Raja Muda Hashim, but he

failed to quell the separatists. Seeing a chance to evict Brunei, the rebels looked south for Dutch aid.

In a case of impeccable timing, James Brooke, an independently wealthy, India-born son of a British magistrate, moored his armed schooner in Kuching. Raja Muda offered to make the Englishman the raja of Sungai Sarawak if Brooke helped suppress the worsening revolt. Brooke, confident London would support any move to counter Dutch influence, accepted the deal. Backed by superior fire power, Brooke quashed the rebellion, held a reluctant Raja Muda to his word, and in 1841 became sovereign of the Kuching region. As expected, the British endorsed Brooke's initiative, eventually knighting him, and Sarawak remained Brooke's personal fiefdom.

Perhaps most surprisingly, the white raja line survived Brooke for two more generations. Unlike British colonial administrators, Brooke and his successors included tribal leaders in their ruling council and honoured local customs. The white rajas discouraged European immigration and European companies from destroying native jungle for huge rubber plantations. They encouraged Chinese migration – despite a rebellion by Hakka immigrants in 1857 that Brooke brutally suppressed – and Chinese came to dominate Sarawak's economy.

Brooke's nephew, the less-colourful Charles Johnson – who changed his name to Brooke – took over in 1863. Charles succeeded in areas his uncle had lagged in, expanding Sarawak's economy and slashing government debt. In 1916, the 86-year-old second white raja installed his eldest son, Charles Vyner Brooke. A two-decade veteran of government service, Vyner professionalised Sabah's administration, preparing it for a modern form of rule.

OUT OF THEIR SHELL

An English ruler in Sarawak spurred the somnolent Dutch to cement their interests in Kalimantan, starting with new coal mines in South and East Kalimantan. Assertiveness bred disputes with indigenous groups, culminating in a four-year war between the Dutch and the Banjarmasin sultanate in 1859. The Dutch retained control but resistance persisted until 1905.

Dutch commercial exploitation of the archipelago reached its peak at the end of the 19th century with thriving rubber, pepper, copra, tin, coal and coffee exports, plus oil drilling in East Kalimantan. In 1907, Britain's Shell Transport & Trading merged with the Royal Dutch Company for the Exploitation of Petroleum Sources in the Netherlands Indies to form Royal Dutch Shell. By 1930, Shell was producing 85% of Indonesia's oil, lubricating Dutch control.

Sarawak's government website (www.sarawak.gov.my) has a balanced history of the state and useful contemporary information.

Joseph Conrad's *Lord Jim* depicts life in Borneo's interior during the 19th century.

1511

Portugal conquers Melaka in a bid to control the spice trade. Brunei succeeds Melaka as Southeast Asia's leading Islamic kingdom and trading centre, dominating northern Borneo and beyond.

1610

Dutch build a diamond-trading post in Sambas, West Kalimantan, beginning a period of more than 300 years of digging and ignoring the rest of Kalimantan's resources.

1701

Brunei cedes Sabah to the Sultan of Sulu, creating the basis for persistent Philippine claims on the territory. Meanwhile, sneezing mad over the pepper trade, the Dutch eject the British from Kalimantan.

1700s

South Kalimantan's Sultanate of Banjarmasin extends its influence to Borneo's east and west coasts. After initially accommodating Dutch colonists, the Banjar War erupts in 1859, with four years of battles and four more decades of resistance.

1824

The Anglo-Dutch Treaty divides the region into what eventually becomes Malaya and Indonesia. Although the Dutch are granted Kalimantan, they are too preoccupied with fighting in Sumatra and Java to pay much attention to it.

1841

After helping Brunei's local governor suppress an uprising and correctly surmising that Great Britain would welcome his presence to counter the Dutch in Kalimantan, Englishman James Brooke becomes first white raja of Sarawak.

BORNEO'S BUCCANEERS

Rich trade routes around Borneo bred piracy, which helped shape the region. The Srivijaya Empire (AD 600–1200) deployed the Orang Laut (local seafaring people) as antipiracy patrols. Also called Sea Gypsies, the Orang Laut converted to piracy by the 11th century.

One Orang Laut buccaneer, Parameswara, fled to Temasek (Singapore) and, driven from there, founded Melaka. An agreement with China's emperor turned Parameswara from piracy to policing the Strait of Melaka, making Melaka Srivijaya's successor as the region's commercial centre. Indian traders brought Islam to Borneo through Melaka.

In the 19th century, Sarawak's first Raja Brooke energetically battled pirates. He was trying to protect more than the high seas: Brunei loyalists hoping to unseat Brooke teamed with Iban brigands dubbed Sea Dayaks. The white raja had an ally in British Royal Navy Captain Henry Keppel, founder of Singapore's Keppel Shipyard, and they jointly attacked pirate groups. Using British aid and forging his own alliances with indigenous groups allowed Brooke to confirm and expand his rule as well as reduce piracy.

In eastern Borneo, Bajaus from the Philippines and Bugis from South Sulawesi also picked up the nickname Sea Gypsies and occasionally preyed on trading vessels. The term 'boogey man' came from Dutch fear of Bugis pirates.

Tunku, a village near Lahad Datu on Sabah's Celebes Sea coast, was a long standing pirates' nest. Even in modern times, the law's reach remains limited in these waters shared between Malaysia, Indonesia and the Philippines. In 1986 bandits in speedboats with automatic weapons staged a daylight raid on a leading Lahud Datu bank. The 2000 kidnapping of tourists from Sipidan, a world-famous diving destination, brought welcome world-class law-enforcement to the area.

A lack of active volcanoes means Borneo's soils are not as agriculturally rich as neighbouring islands such as Java.

Agnes Keith, author of *The Land Below the Wind*, recounted her WWII Japanese prison-camp internment in *Three Came Home*.

BATTLEGROUND BORNEO

Imperial Japan coveted Borneo's resources to power its war machine. Japan seized Sarawak's Miri oilfields on 16 December 1941, and other targets in the poorly defended region fell rapidly.

In West Kalimantan, Japanese occupiers' brutality united local sultans with Dayak, Chinese and Malay leaders. They met secretly in Pontianak in 1942 to plan resistance but were betrayed from within. With accurate information, the Japanese summoned leaders one by one to Mandor, two hours east of Pontianak, for execution. At the start, victims were sultans and their families, intellectuals and ethnic leaders, but soon the Japanese extended the killings to any potential threat. That definition included most men above the age of 17 plus influential women. In all, 21,037 people were murdered and buried in Mandor, Kalimantan's Killing Fields. Pak Sambad, a resident who pushed for recognition of the site, lives outside the gates and recounts its history for visitors.

In Sabah, an infamous labour camp at Sandakan's Agricultural Experimental Station housed Allied captives from across Southeast Asia. Of 2400 Australian

and British POWs, only six survived; today, a quiet park in Sandakan houses an exhibition where prisoners' accounts can be read (see p135). Many Sandakan residents – Chinese, Filipinos and Europeans – aided the captives, smuggling in food, medical supplies and a radio. Those caught assisting the prisoners were tortured, some executed.

In 1944 a primarily Australian force, Z Special Unit, parachuted into Bario (see p213) in the Kelabit Highlands and allied with indigenous Kelabits against the Japanese. Armed with blowpipes and led by Australian commandos, this unlikely army scored several successes. As the tide turned toward Allied victory in the Pacific, bombers targeted occupied Sabah. In 1945, Australian troops landed in East Kalimantan, fighting bloody battles in Tarakan (p287) and Balikpapan (p267), where memorials to Australian and Japanese casualties can be visited. However it wasn't until after the atomic bombings of Japan that its forces surrendered Borneo.

MEET THE NEW BOSSES

Japan's occupation unbottled the *merdeka* (freedom) genie throughout Southeast Asia. For Borneo, though, the end of war didn't mean independence, but division along the old colonial lines.

The Japanese occupiers gave Indonesians more responsibility and, for the first time, participation in government. The Japanese also gave prominence to nationalist leaders, such as Soekarno and Mohammed Hatta, and trained *pemuda* (youth militias) to defend the country. As the war ended, Soekarno and Hatta were by far the most popular nationalist leaders. In August 1945 they were kidnapped and pressured by radical *pemuda* to declare independence before the Dutch could return. On 17 August 1945, with tacit Japanese backing, Soekarno proclaimed Indonesia's independence.

Indonesians rejoiced, but the Netherlands still claimed sovereignty over Indonesia. British troops entered Java in October 1945 to accept the surrender of the Japanese. Clashes between British troops and the new Republican army came to a head in the bloody Battle of Surabaya. After a bomb killed a commander, British ground and air forces attacked the city on 10 November 1945. Thousands of Indonesians died, civilians fled to the countryside, and the poorly armed Republican forces fought a three-week pitched battle. The brutal retaliation of the British, and spirited defence by Republicans, galvanised Indonesian support and helped turn world opinion.

The Dutch dream of easy reoccupation was shattered, and 55,000 troops were dispatched as the British withdrew. Several tentative settlements failed to hold. During the four years of fighting, Kalimantan was on the sidelines, though Dutch intriguers sought deals with local leaders there. In 1949, the Netherlands withdrew under international pressure, including the threat

As part of the resistance to Japan's occupation, Australian commandos encouraged a headhunting revival, offering 'ten bob a nob' for Japanese heads.

1881

British North Borneo Company (later the Chartered Company) is established in Sandakan to administer Sabah. It remains Britain's governing authority until Sabah and Sarawak become crown colonies after WWII.

1888

Once Southeast Asia's pre-eminent Islamic trading centre, teetering Brunei slumps into British arms as a protectorate, giving Westminster three proxies north of Kalimantan.

1905

Dutch institute *transmigrasi* policy, moving villagers from overpopulated Java to outer islands. Independent Indonesia continues the policy: during *transmigrasi*'s 1984–89 heyday, 3.2 million people are relocated, many to East Kalimantan.

1907

Britain's Shell Transport & Trading merges with the Royal Dutch Company for the Exploitation of Petroleum Sources in the Netherlands Indies to form Royal Dutch Shell.

1941–45

Imperial Japan captures and occupies Borneo. Early resistance by local Chinese is brutally repressed. Nascent nationalists greet the Japanese as liberators, but cruelty turns opinion against the occupation.

1945

Soekarno and Hatta proclaim independence of the Republic of Indonesia on 17 August. The Dutch send 55,000 troops, attempting to reassert their authority, but give up the fight in 1949.

of losing American reconstruction aid. The new Indonesian government didn't focus on Kalimantan, but events in northern Borneo soon drew its attention.

Postwar rebuilding in Sabah and Sarawak was beyond their private owners' means and the territories became British crown colonies. Sabah's Chartered Company simply ceded authority to Westminster, but Sarawak proved a far more complex matter. On the eve of the Japanese invasion, amid a rising tide for Malay independence on the peninsula, Raja Vyner Brooke had been ready to hand power to a Supreme Council of local representatives. But after the war, Brooke returned briefly under Australian military administration, then gave control to the British.

Cession inspired a bloody anticessionist movement supported chiefly by Anthony Brooke, Vyner Brooke's nephew and would-be heir. The conflict climaxed in late 1949 when a Malay student assassinated the governor of Sarawak. By 1951, however, the movement had lost its momentum, and Brooke urged supporters to abandon his cause.

KONFRONTASI

While Sabah and Sarawak remained colonies through the 1950s, Kalimantan was part of independent Indonesia, the peninsula's Malaya Federation gained *merdeka*, and Singapore and Brunei achieved internal self-rule under Britain. In 1961 Malaya's ruler Tunku Abdul Rahman proposed a merger with Singapore. To prevent Singapore's Chinese majority from tipping the racial balance away from Malays, his plan required adding British Borneo to the new nation. Malaysia was born in July 1963, fusing Malaya, Singapore, Sabah and Sarawak.

The short-lived federation – Singapore left in 1965 – immediately faced diplomatic crises. The Philippines broke off relations over its claim to Sabah. A UN commission confirmed Malaysian sovereignty, but the Philippines still refuses to recognise it. More seriously, Indonesia's increasingly radicalised, communist-leaning President Soekarno laid claim to all of Borneo. His response to Malaysia's 'annexation' was a military campaign, dubbed Konfrontasi.

Soviet Union-equipped Indonesian armed forces crossed into Sabah and Sarawak from Kalimantan. Additionally, Soekarno supported communist revolts in Brunei and among Chinese farmers in Sarawak. At the height of the conflict, 50,000 troops from Britain, Australia and New Zealand patrolled Sabah and Sarawak's borders with Kalimantan. The presence of 'imperialist' forces fuelled Soekarno's fiery speeches, but the military campaign fizzled. It was three years before Indonesia officially renounced Konfrontasi, but Malaysian rule of Sabah and Sarawak was never seriously threatened.

Allied bombing raids in 1945 left Sandakan in ruins, and authorities moved Sabah's capital to Jesselton, now Kota Kinabalu.

The US government endorsed the Sulu Sultanate's claim to Sabah in 1906 and 1920.

A PLACE IN THEIR COUNTRY

Although Borneo's parts are now firmly ensconced in their respective nations, they remain imperfect fits. Malaysia's national New Economic Policy of preference for native Malays sits uneasily over the ethnic quilts of Sarawak and Sabah. Although Kuala Lumpur has promised to respect indigenous rights and traditional claims, the only thing clear-cut have been forests, frequently over local objections. The unbroken rule of the Barisan Nasional (National Front; BN) coalition at the federal level and the seven-term rule of Chief Minister Abdul Taib Mahmud in Sarawak has led to talk of corruption. After joining Malaysia, Sabah was governed for a time by Tun Mustapha, who ran the state almost as a private fiefdom and clashed frequently with the central government. Clashes persisted even after the Kadazan-Dusun-controlled Parti Bersatu Sabah (Sabah United Party; PBS) took power in 1985 and joined BN.

In 1990 PBS dropped its alliance with BN just before the general election. PBS claimed that the federal government was not equitably sharing Sabah's wealth, and banned the export of logs from Sabah to reinforce the point. The federal government overturned the ban. Despite ongoing discussions, little has changed – a mere 5% of the revenue Sabah generates trickles back into state coffers. Sabah remains the poorest of Malaysia's states, despite its rich natural resources. With an unemployment rate of twice the national average, 16% of Sabah's population lives below the poverty line.

The story is similar in Kalimantan. Soekarno's successor Soeharto ran an autocratic 'kleptocracy' that exploited Kalimantan's resources, disproportionately benefiting Jakarta favourites. Soeharto also expanded transmigrasi polices initiated under the Dutch, moving millions from overpopulated Java and Bali to more remote areas, with East Kalimantan a particular target. Occasional violent clashes make headlines, but the more insidious effect of this *transmigrasi* is to marginalise Kalimantan's indigenous communities, particularly in the democracy emerging since Soeharto's 1998 ouster. Similarly, extension of local autonomy has mainly expanded the power and payrolls of entrenched politicians, whose loyalties often lie more with Jakarta than their presumed constituents.

Brunei had been planning to become part of Malaysia in 1963 but at the eleventh hour Sultan Sri Muda Omar Ali Saifuddin III had second thoughts. He had inherited a fabulously rich country following the discovery of oil in 1929 and, having wrested control of internal affairs from the British, was determined to use this vast wealth to modernise and develop his nation rather than see Kuala Lumpur take the spoils. Shell Oil undoubtedly sympathised with his position. In 1967 the sultan abdicated in favour of his eldest son and the current ruler, the 29th in the unbroken royal Brunei line, Sultan Hassanal Bolkiah. The scandalous spending of Prince Jefri, revealed in the 1990s, harmed the economy and national confidence. With oil reserves declining, hard decisions loom. The maps have been drawn, but the question of who Borneo belongs to remains open.

eMas Sabah (www.sabah.org.my/biindex.asp), a project of the Sabah State Library, provides historic and contemporary information about the state.

The Jakarta Post website, www.thejakarapost.com, and Soeharto-banned Tempo, www.tempointeraktif.com, cover Indonesian news.

1963

Sarawak and Sabah join the short-lived union of Malaya and Singapore to maintain a non-Chinese majority. Indonesia counterclaims all of Borneo and declares Konfrontasi against Malaysia. Sporadic fighting continues into 1966.

1969

Race riots in Peninsular Malaysia result in national New Economic Policy of positive discrimination for Malays. Borneo's indigenous people are granted the same rights as Malay *bumiputra*.

1984

After pulling out of the Malaysia Federation at the last minute two decades earlier, oil-rich (for now) Brunei becomes Borneo's only independent nation under Sultan Hassanal Bolkiah.

1991

Sabah's opposition state government prohibits log exports to safeguard rainforests and indigenous lifestyles. Malaysia's central government in Kuala Lumpur rolls back the ban.

1998

Indonesia's President Soeharto is elected to his seventh term in February. May shootings of student *reformasi* demonstrators and mass rioting in Jakarta pave the way to his resignation and towards democracy.

2007

UN Framework Convention on Climate Change on the neighbouring island of Bali draws global attention to Borneo's shrinking rainforests and sprouts new initiatives to encourage their preservation.

The Culture

Borneo's biodiversity extends to its human inhabitants, from rainforest tribespeople living in natural harmony to Western retirees lured by special visas. The world's third-largest island is a multicultural jungle of more than 200 groups, with indigenous peoples, ethnic Malays (from either Malaysia or Indonesia), Chinese and others blossoming and becoming entwined in Borneo's fertile soil.

On the surface, lifestyles throughout Borneo divide sharply along urban and rural lines. But for many urban dwellers – no matter which country they live in – the village remains their true home. Traditional customs and values, based on village traditions known as *adat* (as opposed to *agama*, meaning religion, though one frequently reinforces the other), remain strong.

Tracing back to Hindu kingdoms, *adat* places emphasis on collective rather than individual responsibility and maintaining harmony. Many aspects of *adat* are a part of everyday life in the *kampung* (village), and indeed even in urban areas. All villagers are equal, under a community leader (*penghulu* or *ketua kampung* or *kepala desa*), whose ancestry often traces back to the village founder. Respect for elders is another ingrained value.

Visitors will find hospitality is a pan-Borneo value. The indigenous longhouse culture, which survives even where longhouses no longer do, includes elaborate rituals for greeting and treating visitors, and has become part of Borneo's character. People realise you've gone out of your way to get here, and they appreciate the effort.

POPULATION

When Malaysia commemorated 50 years of independence on 31 August 2007, it celebrated success as a multicultural, multiracial state. Indonesia's motto is *Bhinneka Tunggal Ika* (Unity in Diversity). For both countries, Borneo is the showplace for aspirations of weaving a cohesive social fabric from many different threads.

Group tensions that have plagued both nations are far less pronounced in Borneo. With more than 200 groups, none which have a dominant majority, Borneo is a mix of indigenous peoples, including the forest dwellers often called Dayaks, ethnic Malays (from Indonesia or Malaysia), and Chinese. Unlike the rest of Malaysia (and to a lesser extent Indonesia), there's no significant Indian population in Borneo.

People from different backgrounds intermingle more easily in Borneo than in their national heartlands. Tensions can erupt, most spectacularly when they involve Dayak groups that practised head-hunting before it became a synonym for executive search.

Brunei's small scale (not to mention great wealth) has allowed all its citizens, some 30% of whom are not Muslim, to find common goals and live together harmoniously in a state run according to Islamic laws. Out in the longhouses of the country's tiny interior, life is practically indistinguishable from that across the border in Sarawak.

Borneo beyond Brunei has experienced increased population growth since 1980, with its population doubling to 18 million people today. Sabah has ballooned from less than a million residents in 1980 to an estimated 2.5 million today. Immigrants from the southern Philippines, with its long running conflict with Muslim separatists, have poured in, legally and otherwise.

Chinese

Comprising about 10% of Borneo's population, Chinese have traditionally been urban traders and businesspeople. That role dates back to Chinese traders visiting Borneo and settling here some 1500 years ago. It has been reinforced through institutionalised discrimination at the national level in Indonesia and Malaysia that restricts Chinese opportunities in the public sector.

Sarawak has Borneo's largest proportion of Chinese, at nearly 30%. In addition to traders, many came as farmers, encouraged to migrate during the rule of the white rajahs in the 19th century. Hakka Chinese poured into West Kalimantan after an early 18th-century gold strike. Today, there's a high concentration of Chinese around Pontianak, where they make up more than a third of the population, and Singkawang, where they're a majority. Singkawang's tourist trade staples include Chinese men, particularly from Taiwan, shopping for brides.

Half a century ago, Chinese traditionally lived above their shops in urban business districts. Today many have moved to the suburbs, often leaving town centres desolate after dark.

Malays

As empires ruling the Malay peninsula and Indonesian archipelago expanded to Borneo, Malay migrants followed. Many Malays came from the Sumatran heartland of the Srivijaya kingdom during its heyday in the 11th and 12th centuries, settling in coastal areas to farm and fish. More recently, Malays have come as government and national commerce have expanded in Borneo.

Today, Malays (including Indonesians) account for about 30% of Borneo's population, but the numbers and composition vary significantly across the island. In Brunei, Malays make up 70% of the population, including the dynasty that's ruled the sultanate since the 14th century. In Sabah, Malays are 12% of the population, and in Sarawak 21%.

Kalimantan has a higher proportion of Indonesians from elsewhere in the archipelago. East and South Kalimantan have sizable minorities of Bugis, seafarers from neighbouring South Sulawesi who established settlements throughout Southeast Asia. But most of the migration from within Indonesia has resulted from national policies and national circumstances.

Dutch colonial authorities initiated *transmigrasi* (transmigration) programs in 1905 to relieve overpopulated areas, mainly in Java, through relocation to remote areas. During the peak period, 1984 to 1989, 3.2 million people were moved, many of them to East Kalimantan. Conflicts have arisen, repeatedly in Sampit between Madurese transmigrants and native Dayaks, with hundreds killed and thousands displaced. Success stories exist, but many transmigrants and their granted land were unsuited to the government-mandated farming life. The program has been curtailed.

Today, Kalimantan is Indonesia's frontier, the land of opportunity. With the nation slow to recover from the Asian economic crisis of 1997 and the upheavals that followed, good opportunities are hard to find.

Indigenous Peoples

Borneo's indigenous people include descendants of traditional Islamic kingdoms as well as rural groups often categorised under the blanket term 'Dayak'. Particularly in Sarawak and Sabah, individual group names are used more often. Dayak cultures have taken a beating at the hands of the 20th and 21st centuries, but they remain a distinctive feature of Borneo, well worth experiencing with a longhouse visit.

The term 'Dayak' was first used by colonial authorities: it means upriver or interior in some local languages, human being in others.

'The world's third-largest island is a multicultural jungle of more than 200 groups...'

THE BORNEO LONGHOUSE

Longhouses are the traditional dwellings of the indigenous peoples of Borneo. These communal dwellings are raised above the ground and may contain up to a hundred individual family 'apartments' under one long roof. The most important area of a longhouse is the common veranda, which serves as a social area and sometimes as sleeping space.

It's fair to say that there are two types of longhouse: 'tourist longhouses' and 'residential longhouses'. The former, as you can guess, are set up for tourists and are often built using traditional materials and construction techniques. They look like you might imagine (or hope) a longhouse should look, but they're pretty much just for display purposes.

In contrast, residential longhouses are where people actually live. If you're expecting these longhouses to look like something out of the Raja Brooke-era, you might be disappointed: most residential longhouses these days are quite modern in construction, with electronic appliances in all the apartments and parking lots out the front. Still, this is where real life happens, and if you want to see how Borneo's modern-day indigenous peoples live, a visit to one is a must.

When visiting a longhouse, it is polite to wait outside until someone from the longhouse invites you in. Bringing a few gifts is always appreciated. Usually, if you are travelling upriver with a guide, your guide will take you to a longhouse where he or she has relatives or friends.

KALIMANTAN

Banjarese dominate South Kalimantan and are also the largest distinct group in Central Kalimantan (which was split from South Kalimantan in 1957). Banjarese (or Banjars) trace their roots to Sumatra more than 1500 years ago and settled along the Martapura River, mixing with Dayaks, adopting Islam, and eventually establishing a sultanate in Banjarmasin.

Ngaju people instigated the creation of Dayak-majority Central Kalimantan from part of South Kalimantan. Ngaju are the largest of dozens of Central Kalimantan Dayak groups. Barito Dayaks, like Barito River, are in both Central and South Kalimantan. Baritos' Hill Dayak subgroups inhabit the scenic Meratus mountain range.

Along East Kalimantan's Mahakam River, the Kutai are the main indigenous group in the lower reaches, hosting the annual Erau Festival for Dayaks at their capital Tenggarong. Dayak villages begin midriver, featuring Benuaqs around Tanjung Isuy.

Kayan and closely related Kenyah Dayaks are found in the Apokayan Highlands, branching throughout Kalimantan and into Sarawak and Brunei. They share many characteristics with other Dayak groups, including living in longhouses, growing rice and rivalry with the Iban. Kayan stand out for their use of ironwood (*ulin*) for longhouses and boats, and for an elaborate social hierarchy based on class. Unlike most other groups, Kayan men as well as women sport elongated ear lobes.

The unique Punan cave dwellers live between the headwaters of the Mahakam and Kapuas rivers, spanning East and West Kalimantan. Today, most Punan have moved out of caves. Opinion differs as to whether these Punan are related to Sarawak's Punan and Punan Bah groups.

SABAH

More than 30 indigenous groups make Sabah a medley of traditions and cultures. There's no majority group, and immigration complicates the picture.

Kadazan-Dusun are the largest ethnic group in Sabah, at about 18% of the population. Kadazan and Dusun share a common language and customs, and are traditionally rice farmers and rice-wine brewers. Kadazan originally lived mainly in Sabah's western coastal areas and river deltas, while Dusun inhabited the interior highlands. Mainly Roman Catholic, Kadazan and

Dusun rarely intermarry with Muslims but Kadazan and Dusun-Chinese couples are not unusual.

Living along Sabah's coasts, Bajau trace their roots to the Islamic sultanate on the Philippine island of Sulu, which once ruled eastern Sabah. According to legend, Bajau were once sea nomads who came ashore only to bury their dead. East-coast Bajau (and those in neighbouring East Kalimantan – see p284) remain seafarers, living in coastal stilt homes or aboard their boats. West-coast Bajau have become farmers, growing rice and raising livestock. Nicknamed 'Cowboys of the East', they show off their equestrian skills at an annual Tamu Besar in Kota Belud.

Murut, Sabah's third-largest indigenous group, originated in the south-western hills bordering Kalimantan and Brunei, and were soldiers for Brunei's sultans. Murut grow hill-rice and hunt with spears and blowpipes that have poison darts. They were Sabah's last group to abandon head-hunting.

SARAWAK & BRUNEI

Indigenous people make up about half of the population of Sarawak. Dayak culture and lifestyles are probably easiest to observe and experience here. The Penan Dayaks, highly idealised for living in harmony with the forest, inhabit Sarawak and Brunei (see below).

The Iban, comprising about 30% of Sarawak's population, migrated from West Kalimantan's Kapuas River starting in the 16th century. Iban are rice-growers and longhouse dwellers, but they became known as Sea Dayaks for their exploits as pirates. Reluctance to renounce head-hunting, which they practised on Japanese occupation forces during WWII, enhanced Ibans' ferocious reputation.

Also migrants from West Kalimantan, Bidayuh are concentrated in the hills west of Kuching, near the Kalimantan border. Dubbed 'Land Dayaks', Bidayuh were displaced by other Dayak settlers entering their territories and victimised by Brunei's governors. The Brooke dynasty's efforts to assist the Bidayuh – and make war on their enemies – helped preserve the group's identity.

Several Dayak groups are known collectively as the Orang Ulu (Upriver People) in Sarawak, including Penan, Kayan and Kenyah. Kelabit, living in the highland headwaters of the Baram River, are related to Sabah's Murut people. Living in a cool climate, they're Borneo's most prolific vegetable-farmers.

In Brunei, indigenous non-Malays, mainly Iban and Kelabit, account for less than 10% of the population.

DAYAK LIFESTYLES

Anthropologists generally agree Dayaks share roots with Malays and are analogous to the Orang Asli (original people) of the Malay Peninsula. Dayak's

PENAN: 'MOLONG' LIFE

The rightly romanticised hunter-gatherers of the forest, Penan were originally nomads in Sarawak and Brunei. Most have settled in longhouses in northern Sarawak's Baram and Bukit Mas districts, though several hundred remain pure nomads. Nomadic or not, they practise *molong*, never taking more than they require from the forest. Settled Penan may plant rice, but they still rely on the jungle for most of their food – including sago from palm trees and game, hunted with poisoned darts from blowpipes – as well as medicine and clothing.

With their lifestyle under severe threat from timber cutting in their traditional areas, Penan have joined campaigns to block logging roads. While many sympathisers want to protect the Penan way of life, Malaysian authorities say the Penan should be assimilated into mainstream society, whether they like it or not.

The Borneo Project's documentary film *Rumah Nor*, highlighting a landmark 2001 court-victory to protect Punan Dayak forest rights, can be viewed online at <http://borneoproject.org/article.php?id=628>.

Based in Kuching, the *Borneo Post* offers print and online editions (www.theborneopost.com) and specialises in reporting on Sarawak's indigenous communities.

ancestors arrived in Borneo about 3000 years ago. They brought influences of the Dongson culture from Vietnam and southern China including irrigated rice-cultivation, buffalo-sacrifice rituals, and ikat (fabric patterned by tie-dyeing the yarn before weaving) weaving. These migrants mixed with ancestors of Niah cave-dwellers, developing into more than 200 groups with distinct languages and cultures. Dayaks adapted imported skills to their particular environments and became self-reliant tribal units; outsiders introduced the concept of trading centuries later.

Traditional clothing includes ikat worn as sarongs and loin clothes with beadwork for ceremonial dress, and Dayaks use rattan and bamboo for a variety of needs. Woodcarving is a key craft both for decoration and ceremonial purposes. Many groups erect totems to commemorate buffalo-sacrifices or other milestones. Dayaks are also renowned for forging *mandau* (machetes), suited for brush-clearing as well as combat.

Head-hunting, the most notorious aspect of Dayak culture, was largely eliminated by the end of the 19th century, though it makes sporadic comebacks. Severed heads were roasted and skulls preserved as tribal trophies.

The most striking feature of many older Dayak women is their elongated pierced ear lobes, stretched by the weight of heavy gold or brass rings. This custom is increasingly rare among the young. Older Dayaks may trim their ear lobes as a sign of conversion to Christianity.

Women once tattooed their forearms and calves with bird and spirit designs. Tattooing of young women has almost disappeared, except deep in the interior. Men still do it, although in many Dayak cultures, men were expected to earn their tattoos by taking heads.

Dayak men also practised penis adornment by surgically inserting beads and bell into the foreskin. The most extreme practice involved placing a *palang* (a metal rod or bone) horizontally through the penis. The result is believed to emulate the natural endowment of the Sumatran rhino. (It's worth noting that species is nearly extinct and notoriously hard to breed.) Traditional insertion methods employ a bamboo vice and a cold river.

Dayak community life still centres on the longhouse (*rumah betang*, *rumah panjai*, or *balai*), a dwelling for dozens of families, sometimes hundreds of metres in length. Longhouses take a variety of shapes and styles, but most are built off the ground, accessible by a log carved into steps, and have individual quarters for each family plus communal areas.

These days longhouses can be divided into two categories, tourist longhouses and residential longhouses. The former have been preserved (or reconstructed) for tourists, often using traditional materials and construction methods. They look the way you'd expect a longhouse to look, but village residents usually live nearby in individual houses.

Residential longhouses, where people actually live, may disappoint if you're expecting something out of the Rajah Brooke era. Longhouses often use modern materials, have electricity and even parking lots in front. But a longhouse is a way of life. It embodies a communal lifestyle of mutual reliance and responsibility, and it is this spirit rather than the building that makes it significant.

An elder (*tuai rumah* or *ketua rumah*), is leader of the longhouse. Depending on the tribe, the leader may be appointed by his predecessor or elected. Either way, heredity often plays a key role in selection. Ceremonies feature a variety of dances and often entail consumption of *tuak*, a wine of fermented rice or a variety of other plants. It's potent. If you attend a ceremony, you'll be expected to drink. Accepting an invitation to join the dance and making a fool of yourself are sure crowd-pleasers.

Up the Notched-Log Ladder is Sydwell Mouw Flynn's memoir of her parent's missionary work among Sarawak's Dayaks from 1933 to 1950, and her return to the land where she was raised half a century later.

GIFT TIPS

It's traditional to give gifts when you visit a longhouse. Some say the tradition began with guided tours. Standard suggestions for gifts – cigarettes and candy – appal many visitors. So we asked guides and Dayaks themselves for alternatives.

First, ask your host (if you've been invited) or your tour guide what the longhouse needs. Useful items such as fishing line are hard to find in the jungle. Some hosts are reluctant to make suggestions (and it's difficult to get answers to any direct question throughout Asia), so ask, 'What am I going to miss out there?' Fruits or spices common in the city may be longhouse luxuries.

Communal gifts are presented to the longhouse leader, who then parcels them out as he (invariably, it's a man) sees fit. Individually packaged, pre-portioned items work best. A couple dozen envelopes of powered milk may be welcome in some areas. Toothbrushes and/or toothpaste can help combat rampant tooth decay. Notebooks and pencils for school children seem ideal, but beware that logging for paper production is a major issue among many Sarawak Dayaks.

If you've been invited by a family, present a gift to them (again, seek advice) and benefit the community by hiring a guide or taking a canoe trip.

Most Dayaks today do not live in longhouse communities, but in towns and cities, visiting their villages only for family events and festivals. Deforestation and the success of Christian missionaries over the last century has resulted in fragmented communities and the slow disappearance of traditional identity.

Many politicians contend Dayaks are better off being brought into the modern world. Indeed, Dayaks often go to school, get modern jobs, and live in towns. Today's Dayaks welcome these options, but increasingly find they have no other choice.

ECONOMY

Two truisms hold regarding Borneo's economy outside Brunei. First, Chinese generally control business, with Malays' political power giving them a cut. Second, primary commodities dominate.

The traditional export is timber, with Sarawak among the world leaders in log shipments. Not surprisingly, Borneo also has Asia's highest deforestation rates; a UN report estimates that 98% of its primary forest will be logged by 2022. Much of the logging in Kalimantan is believed to be illegal, so be careful about snapping photos.

Palm-oil plantations often replace logged forests and are an excuse for more cutting (see p53). Many areas in Kalimantan granted permits for palm-oil plantations have been cleared of timber but never planted. Malaysia and Indonesia together produce 86% of the world's latest miracle juice. Indonesia is poised to overtake Malaysia as the top palm-oil producer sometime this decade, with much of its new production from Kalimantan.

Traditional crops such as rubber, cacao, sago, rattan and pepper in addition to seafood, remain important. Borneo is also a famed source of swiftlet nests, the key ingredient in the Chinese favourite, birds-nest soup. The nests also has medicinal and cosmetic uses. Kalimantan still produces gold and diamonds.

Since steamship times, coal miners have been digging into Kalimantan. Output has increased dramatically in the past decade with demand from China in particular. Coal carriers now compete with logging barges as flag-ships for environmental challenges along the Mahakam River.

Oil and natural-gas production from mainly offshore fields thrives throughout Borneo. Industry centres are Seria in Brunei, Miri in Sarawak, and Balikpapan in East Kalimantan.

The Malaysian Palm Oil Council chronicles 'Malaysia's quest to be a responsible and efficient supplier of palm oil in the global market' at www.malaysiapalmoil.org.

BruDirect.com (www.BruDirect.com) presents a mix of fresh news, business information and visitor tips about Brunei.

Industry analysts project Brunei's oil and gas reserves will be exhausted between 2015 and 2030. Production is capped to try to stretch the supply, and extensive new deep-sea explorations are planned. Government initiatives to diversify the economy, which focused on agriculture, technology and banking, have gained some traction but attracting foreign investment necessary for large projects remains difficult. Foreign labour is limited to protect the domestic workforce, 60% of which works in either the civil service or armed forces.

RELIGION

In Borneo, as in Indonesia and Malaysia, religion blends with traditional beliefs. Malaysia and Brunei have declared Islam the state religion, while Indonesia is the country with the world's largest Muslim population without being an 'Islamic state'. In all three nations, religious freedom is constitutionally guaranteed. Except in Brunei and South Kalimantan, no religion has an overwhelming majority in any jurisdiction; most urban areas have prominent mosques, churches and Chinese temples.

Islam

Islam came to the region with South Indian traders and didn't follow orthodox Arabian tradition. It was adopted peacefully by coastal trading ports, absorbing rather than conquering existing beliefs, and remains tolerant and moderate. Many ceremonies and beliefs include pre-Islamic traditions.

Brunei's Sultan has steered his nation towards Muslim fundamentalism, adopting a national ideology known as Melayu Islam Beraja (MIB), stressing Islam, Malay culture and the monarchy.

Dayak Religions

Dayak religion is called Kaharingan, a form of animism focused on spirits associated with virtually all places and things. Its practice differs between tribes, though there are many commonalities.

Carvings, totems, tattoos, and other objects (including severed heads in earlier times) are used to repel bad spirits, attract good spirits and soothe spirits that may be upset. Totems at entrances to villages and longhouses are markers for spirits. The hornbill is considered a powerful spirit, and is honoured in dance and ceremony, its feathers treasured. Black is widely considered a godly colour, so it features in traditional outfits.

Ancestor worship plays a large part in Kaharingan. After death, Dayaks join their ancestors in the spirit world. For some groups, spirits may reside in a particular mountain or other natural shrine. Burial customs include elaborately carved mausoleums, memorial monoliths, or internment in ceramic jars.

Even when Dayaks convert (mainly to Christianity but also to Islam) remnants of old religious practices remain. These include festivities such as the harvest ceremony, known broadly as Gawai Dayak, and they're usually considered tradition rather than religion.

Christianity

Missionaries have converted many Dayaks to Christianity, and their work continues in remote areas. Roman Catholic, traditional Protestant, and evangelical sects all have Dayak followers. Some of the evangelicals insist on purging all vestiges of previous beliefs, but usually Christianity overlays traditional practices.

Chinese Religions

Chinese in the region generally follow a mix of Buddhism, Confucianism and Taoism. At one level Chinese religion is animistic, with a belief in the

innate vital energy in rocks, trees, rivers and springs. At another level, figures from the distant past, both real and mythological, are worshipped as gods.

Day-to-day, most Chinese are less concerned with the high-minded philosophies and asceticism of the Buddha, Confucius or Lao Zi than with pursuing worldly success, appeasing the dead and the spirits, and seeking knowledge about the future. Chinese religion includes what Westerners might call 'superstition' – to get your fortune told, for instance, go to a temple.

As with other groups, there's no bright line where tradition ends and religion begins. Chinese who adopt Christianity or Islam may carry out some Chinese religious practices under the banner of tradition.

WOMEN IN BORNEO

In Borneo, women face the same issues as in their national societies. Whatever their group, their challenge is balancing customary duties with responsibilities of the modern era. Women still undertake traditional roles but are also well educated and gainfully employed. Two-income households are increasingly common and often a necessity, with women widely represented in government and industry.

Dayaks track lineage through both father and mother, and gender roles are strictly prescribed. In some tribes, women have special roles. A female priestess, called a *bobohizan*, presides over many key Kadazan-Dusun traditional rituals. Dayak traditions include penis adornments to enhance partner pleasure (see p33).

Islamic society is male-oriented but regional customs regarding women are more relaxed than in many other Muslim societies. Gender politics rarely top the agenda, but many organisations promote women's rights. The region's most outspoken critic of women's roles has been Marina Mahathir, daughter of Malaysia's former prime minister, Mahathir Mohamad. In 2006, she compared the lot of Malaysia's Muslim women to that of blacks under South African apartheid, held back by rules that don't apply to more liberated Chinese women and other non-Muslims.

The *tudong* (headscarf) is a recent sticking-point as Muslim women in Malaysia and Indonesia feel increasing pressure to cover their hair. Wearing a *tudong* doesn't make a woman subservient or docile, but when it becomes a mandate, it also becomes a sign of gender inequality.

In Islamic Brunei more women wear the *tudong*, yet many work. There are even female politicians. Since 2002, female Bruneians have been able to legally transfer their nationality to their children if the father is not Bruneian. Indonesia passed a similar law in 2006.

It's not just Islamic society that fosters gender inequality. A thriving bride-market centres on Sinkawang in West Kalimantan, with men from Taiwan the primary buyers.

Trafficking of young women is a serious problem in Kalimantan. The long, mainly unguarded border makes it simple to move people into Malaysia, as a destination or a transshipment point. Sometimes relatives sell women to traffickers. In other cases, women are duped into accepting overseas work that turns out to be forced prostitution.

Even legitimate contracts as household workers can go bad. Rape and abuse of Indonesian maids – favoured in Muslim countries for their Islamic background – is reportedly rampant. In 2007, an Indonesian domestic made headlines when she tried to escape her employer's high-rise apartment in Kuala Lumpur by climbing down a bed sheet.

Liberal Islam Network
(<http://islamlib.com/en/page.php>)
offers a Southeast Asian
counterpoint to Muslim
fundamentalism.

In Borneo hotels, 'satellite TV' often doesn't mean CNN, HBO and ESPN; picking up faraway national broadcast channels often requires a dish.

ARTS

Punan people painted on their cave walls in ancient times, but traditional crafts trump fine arts throughout Borneo.

The woven baskets of the Iban, Kayan, Kenyah and Penan are among the most highly regarded in Borneo. The most memorable craftwork for many travellers is the Kadazan-Dusun tall backpack of rattan, bamboo and bark seen at Mt Kinabalu. The most common weaving material is rattan, but bamboo, swamp nipah grass and pandanus palms are also used for baskets, sleeping mats, seats and materials for shelters.

In Brunei, too, crafts (especially *jong sarat* weaving, silverwork and basketware) have traditionally been more important than fine arts. While each ethnic group has certain distinctive patterns, hundreds or even thousands of years of trade and interaction has led to intermixing.

Ikut, or cloth weaving, is another pan-Borneo craft. West Kalimantan's Kapuas region is renowned for its ikat, and the provincial government supports efforts to preserve it in longhouse communities around Sintang. Sambas and Sarawak are well-known for *songket*, fine cloth with threads of gold or silver woven in. *Doyo*, beaten tree bark, is used mainly in East Kalimantan's Mahakam River region for both clothing and decorations.

Pua kumbu is a colourful weaving technique attributed to the Iban, and used to produce both everyday and ceremonial items decorated with a wide range of patterns. A special dyeing process creates the colours for *pua kumbu*. Ikat dyeing is performed while the threads of the pattern are already in place on the loom, giving rise to its English name, 'warp tie-dyeing'. Banjarmasin is known for *kain sasirangan* (tie-dyed batik).

Kenyah and Kayan are the most skilled carvers of Borneo. They create *kelirieng* (burial columns), up to 2m in diameter and 10m in height, and entirely covered with detailed carvings, to bury the remains of headmen. Decaying remnants of *kelirieng* are still uncovered in Sarawak, and an example can be seen in Kuching Municipal Park.

Singing and dancing, often accompanied by copious consumption of *tuak*, play big parts in Borneo's indigenous cultures. All Dayak groups have some variation of the graceful hornbill dance. Many also have various *mandau* dances performed in battle regalia as a prelude or conclusion to hunting or fighting.

Gongs and drums accompany dancing. Ensembles often include the *sape*, a four-string guitar with wooden body and rattan strings. Other Dayak musical instruments include bamboo flutes and the *engkerurai* or *keluri*, a kind of bagpipe with bamboo pipes and a gourd as its wind sack.

Food & Drink

Borneo's food mirrors national standard dishes, with local specialties spicing up the mix. Both Indonesian and Malaysian food are heavily influenced by traders that frequented their shores and by the immigrants that settled in the region.

Generally, Indonesian cuisine is simpler and has less of an Indian influence compared to Malaysian food. Malay cuisine tends to blend flavours while Indonesia keeps them distinct. Malay food also has more borrowed names from the Chinese dialects (the array of Malay noodle dishes are bewildering). Bruneian cookery is almost identical to Malaysian.

Fork and spoon, in the left and right hand respectively, are the usual utensils, though, especially in Kalimantan or Dayak communities, it's common to eat with your right hand (only).

STAPLES & SPECIALTIES

Throughout Borneo, *nasi* (rice) and *mee/mie* (noodles) are staples. Rice is eaten steamed; as *nasi goreng* (fried with other ingredients); as *bubur* (boiled into sweet or savoury porridge, often eaten for breakfast); or in glutinous varieties, steamed and moulded into tubes or cubes. Noodles can be made from wheat, wheat and egg, rice, or mung beans, and are served fried or boiled in soups (*soto*) or dry as a main or side dish.

Fresh fish, usually cooked whole, *goreng* (fried) or *bakar* (grilled), is a regional favourite. *Pepes ikan* (spiced fish cooked in banana leaves with tamarind

BREAKFAST IN BORNEO

Breakfast is a toughie in Borneo. Unless you stay in international-class resorts or hotels, you can forget about a nice 'full English'. More than likely, you'll have to make do with some plain factory-bread and instant coffee in a guesthouse. Or, if you're more adventurous, you may wander down to a Chinese *kopitiam* (coffee shop) and see what the locals are eating. You'll be disappointed to find that most people there will be slurping on noodles. If you're like us, you like your noodles, just not for breakfast. So what else is there to eat when you need to fill up before a day of sightseeing?

One option is finding an Indian or Malay/Indonesian *kedai kopi* (coffee shop), where you can order a *roti*, a type of unleavened flatbread cooked on a griddle. This is often the closest you can come to toast and it's usually served with a curry to dip it in (okay, it's not exactly strawberry jam).

If you demand toast and eggs, you may be surprised that this is actually fairly easy to get at most Chinese *kopitiam*. The drinks stall at these places usually serve toast and the fried-noodle stall will usually have some eggs that they can fry in their wok – just stress the fact that you don't want soy sauce or ketchup on your eggs. These items will be delivered separately for you to put together at your table.

If eggs aren't on offer, there is another option: most 'toastmasters' also stock *kaya*, which is a sweet coconut-based spread that they will slather on your buttered toast. You may find yourself developing a taste for this wonderful stuff as you travel around Borneo.

Buying a *Pao* (Chinese steamed dumpling) is another option at a *kopitiam*, and you will usually see these steaming out the front of the shop in a pile of wooden steamers, along with various forms of dim sum.

Finally, keep in mind that many towns in Borneo have morning markets where you can pick up some fresh fruit and perhaps a bit of sticky rice.

For information on drinks available at coffee shops in Borneo, see p44.

and lemon grass) is also popular. Seafood is also popular where available. *Terasi* (fish paste) and *belacan* (shrimp paste) are common spices.

Chicken is the next choice for carnivores, also often prepared *goreng* or *bakar*. Chicken and fish are often served *lalapan* style with aromatic raw *kemangi* (basil) leaves and fresh *sambal* (spicy chilli sauce). Beef is relatively rare and found mainly in upmarket establishments.

Satay (skewered meat cooked over a flame) has become a pan-Asian favourite. *Satay* is usually made from *ayam* (chicken), *kambing* (goat), but the word is also used for lamb and mutton), and occasionally *ikan* (fish), *cumi* (squid) or *udang* (shrimp). It's served with peanut sauce. *Satay kambing* can be accompanied by *gule*, a spicy soup from goat stock.

Protein-rich soya bean (*dao* or *tau*) is present in many dishes, whether in the form of *tauhu* (bean curd), *tempe* (fermented whole beans) or cooked with *kicap* or *kecap* (soy sauce). Soy sauce comes in salty, sweet, and other varieties.

Pork is *haram* (forbidden for Muslims). It's available in some Chinese restaurants, though many boast they are 100% *halal* (compliant with Muslim dietary laws). Alcohol is also *haram*, but it's available everywhere in Sabah and Sarawak, less widely in Kalimantan. Resident expats in Brunei can purchase tipples at special shops but visitors are limited to what they can carry in (12 cans of beer or two bottles of spirits).

The neighbourhood *warung*, *kedai kopi* or *kopitiam* (the Bahasa Indonesian, Malay and Hokkien terms are commonly used; the latter two translate as coffee shop) is a no-frills café where neighbours may stop for a *kopi* (coffee) or *teh* (tea) and a meal. Kalimantan has many Padang restaurants where the food is cooked in advance and displayed in the window. Put aside concerns about refrigeration – Padang's Minang people cook once a week, and the tradition predates refrigerators. Variety includes spicy *rendang* (coconut curries) also popular in Malaysia. The food is room temperature, served over hot rice, either to eat in or take away as *nasi bungkus*, usually wrapped in banana leaf.

The hawker meal is central to the experience of eating in the region. In Kalimantan, they are known as *kaki lima* (five legs: two for the proprietor, three for the cart). Different carts specialise in specific dishes.

Fruits are plentiful everywhere but Central Kalimantan. In addition to oranges, bananas and pineapples, Borneo is famous for growing durian, the spiky, smelly king of fruits that people either love or hate. Rambutan are bright red with soft spikes (its name means hairy) and similar to lychee.

BORNEO SPECIALITIES

Different parts of Borneo have their own food specialities, often riffs on national dishes.

Dayak food varies, but you may sample *sayur asem rembang* (sour vegetable soup). Sago palm is the main starch component of some tribal meals. Sago-based dishes include *linut*, a thick translucent paste eaten hot with *sambal*. As an honoured guest, you'll likely be served meat on any longhouse visit, pig among non-Muslims, deer or chicken in other hunting communities. It's polite to at least appear to eat some of it.

Fish dishes are popular, including Sabah's *hinava* (raw fish marinated with lime juice and herbs) and *ketupat Kandangan* (fish and pressed rice with lime-infused coconut sauce) in Kandangan, South Kalimantan. Banteng is a popular river-fish this is bony but very tasty. Wild boar and deer are Sarawak favourites, and vegetable dishes made with jungle ferns and *paku* (fern shoots) are not to be missed. In Kalimantan, *kijang* (deer) *satay* is popular.

Udang galah is a giant river prawn found throughout the region that grows to more than 30cm and is great fried or grilled with garlic.

The one Borneo cuisine worthy of the term is Banjar, which thrives in South Kalimantan's capital Banjarmasin. For breakfast, try *kue* (cakes) or deep-fried breads with various fillings, sticky banana rice cakes, *bingka barandum* or *bingka kentang* (baked pancakes from rice or potato respectively), all cheap and tasty options at tea stalls. *Nasi kuning* (saffron rice served with chicken or fish and vegetables), a breakfast speciality elsewhere in Indonesia, is served anytime here and is topped with a zesty tomato sauce.

People here often enjoy fish and seafood, especially *udang galah* (giant river-prawn), barbecued or fried with an array of marinades and sauces. Other Banjar specialities include *ayam panggang* and *ayam goreng* (chicken barbecued or fried, served in sweet soy sauce) plus *ayam masak habang* (chicken with large, red chillies). Don't miss *soto banjar*, fragrant chicken soup packed with rice noodles, herbs and topped with a piece of barbecued chicken – order with *lontong*, rice cooked in pandanus leaves. Food stalls and *warungs* serve delicious versions of these specialities.

Sugar freaks will love many little Banjar sweets, known as *ampar tatak* (literally meaning 'cut plate'). Banjarmasin's Pasar Wadai cake market is renowned throughout Indonesia for breaking the fast during Ramadan.

VEGETARIANS & VEGANS

If you're vegetarian, say: *Saya hanya makan sayuran* (I only eat vegetables). If you're a vegan, you may want to take it a step further: *Saya tidak makan yang di perbuat dari susu, telur, ikan atau daging* (I don't eat dairy products, eggs, fish or meat).

Vegetarians will be pleased to know that *tempe* and *tauhu* are common. Finding fresh veggies requires more effort. Look for Chinese establishments; they can whip up *cap cai* (mixed vegetables). Vegetarian fried rice or noodles can be found at other eateries.

Padang and other *warungs* offer *nasi campur* (rice with a choice of side dishes). Load up on tofu, *tempe*, *nanika* (jackfruit), egg dishes and leafy vegetables (ask for *daun/down ubi*, cassava leaves). If meat is in a dish it's usually pretty obvious, but ask about hidden things such as fish paste, often used in *sambal*, or for bones lurking in the soup stock.

KEDAI KOPI: WHERE BORNEO EATS By Jeremy Tan

Britain may have its chip shops, New York its delis, but in Borneo, the *kedai kopi* reigns. Literally meaning 'coffee shop' in Malay, *kedai kopi* serve much more than coffee. They are the precursors to the famous hawker centres found in Singapore, and run the gamut from small holes-in-the-wall dating back to colonial days selling only a single type of food, to newer, larger establishments with a larger choice of food stalls. A few things are standard though: the food is good, cheap, and the atmosphere is loud and boisterous during meal times (not the best place to bring a date perhaps). A good majority of the local population will stop into a *kedai kopi* at least once a day for one of the six daily meals (breakfast, morning tea, lunch, afternoon tea, dinner, supper).

Depending on the town and neighbourhood you're in, you will run into Malay *kedai kopi*, Chinese *kopitiam*, or Indian *gerai mamak*. In Indonesia, these places are referred to as *warung*. The food on offer at each will differ greatly but the operating principle is the same. Usually, the shop owners will rent out space for food stalls while they operate the drinks concession themselves. Occasionally, the shop owner will also serve up rice with a selection of meat and vegetable dishes which are kept warm in heated buffet servers. In larger establishments, there may also be short-order food available. Individual stalls usually sell one dish or a group of related dishes and most

'Britain may have its chip shops, New York its delis, but in Borneo, the *kedai kopi* reigns.'

of them will have signs in English displaying what they are serving; the trick for the traveller is to figure out what that is.

When you walk into a *kedai kopi*, especially a busy one, you may be a little confused as to etiquette of sitting at a table and ordering. There is rarely any orderly system for table appropriation; the rule is whoever plonks themselves down first after the table is vacated will get the spoils. If you are with a small group and there is a large table free, sharing the table with others is a common practice. As for ordering, the general guideline is that in the older-style places where there is only one single stall, grab a table and someone will come and take your order for drinks and food. In such places, the stall is usually owned by the shop owner as well, so the bill will be tallied up at the end of your meal and you pay when you leave. In a newer establishment, where there are multiple food stalls, after securing a table, look around for what looks appetising, and order food directly from the stall owner. Don't worry, they'll magically figure out where you're sitting, no matter how large the place is. Drinks, however, are not ordered at the drinks station; someone will come to your table instead. In such places, food and drink is paid for immediately upon serving, and not after your meal.

Stalls at most places will have English or at the least phonetic translations in the Roman alphabet on their signs, so you'll be able to figure out what they have on offer.

'Malay kedai kopi will usually have nasi campur which is rice with a selection of Malay dishes.'

Malay Kedai Kopi

Malay *kedai kopi* will usually have *nasi campur* which is rice with a selection of Malay dishes. At some places, this is called *nasi padang*, which is the Indonesian equivalent. The price varies on what you select from the buffet to accompany your rice. Some special dishes one can generally expect to find in the *nasi campur* buffet:

Cangkok Manis – A dark leafy vegetable, usually stir-fried with egg.

Kangkong Belacan – Water spinach stir-fried with *belacan* (shrimp paste).

Midin Belacan – Local wild fiddlehead fern fried with *belacan*.

Rendang – A spicy dry coconut-based curry usually made with beef, sometimes with chicken.

Sambal – An assortment of spicy dishes made from ground chillis and *belacan*, usually cooked with calamari (*sambal sotong*) or dried anchovies (*sambal ikan pusu*).

Sometimes, the restaurant may also prepare fried rice or noodles, called *nasi goreng* and *mee goreng* respectively, done in a variety of styles. Generally there will be one or two stalls selling other Malay food which you can order from in lieu of *nasi campur*. There are several dishes common to these places:

Nasi Lemak – Rice cooked in coconut milk, served with salted fish, egg, and *sambal* – a common Malaysian breakfast.

Mee Jawa – Javanese-style thick yellow noodles with chicken and bean sprouts in a rich sauce.

Mee Sapi – Noodles with beef, either served in a hearty broth or with a light gravy.

Satay – Grilled meat skewers, served with the peanut sauce.

Sup Ekor – Oxtail soup.

Sup Tulang – Stew made from beef bones.

East Malaysians tend to have their food less spicy than Malays from Peninsular Malaysia. Also, the choice of Malay food is somewhat limited when compared to the heartlands of Kelantan and Terengganu, but what is available in Borneo is still very good. Recently, Malay food from the Peninsula has slowly started coming into Sarawak and Sabah, and so it is starting to become common to see traditional Kelantanese dishes such as *nasi dagang* (rice and glutinous rice cooked in coconut milk, served with side dishes) becoming available.

Chinese Kopitiam

The venerable Chinese *kopitiam* can be found in abundance all over East Malaysia, especially in the Chinese-dominated downtowns of the major cities. Some have been operating within the same family for a few generations, only specialising in a single dish, while many of the newer ones have multiple stalls featuring a smorgasbord of food to choose from. Chinese hawker food in Malaysia is the most varied by region compared with Malay and Indian food. There are many regional specialities, owing to successive waves of immigrants from different provinces in China. Chinese cuisine has also intermingled with Malay to form a distinct *peranakan* or *nonya* cuisine in older areas of Chinese settlement such as in Melaka. This style has grown beyond its original borders and influences much of what constitutes Chinese hawker fare today. Regional differences in Chinese stall food is still quite pronounced and it has become quite common to see regional specialities being sold in another locale (labelled proudly with its provenance, naturally). Furthermore, new dishes are being devised every day.

Chicken Rice – Chicken served with rice that has been cooked in chicken stock. This dish can also be found with roast chicken or pork instead of the standard boiled chicken.

Fish ball soup – Fish balls and stuffed tofu in a pork broth, usually with *tang hoon* (mungbean noodles).

Foochow Meesua – Wheat vermicelli, chicken and mushrooms in a large bowl of broth laced with Chinese wine; found in Foochow areas such as Sibiu.

Kampua Mee – Another Foochow specialty, similar to Kuching-style *kolo mee* but tossed with lard.

Kolo Mee – A speciality of the Kuching area but found throughout the country, this is *mee* (wheat noodles) tossed in a mixture of oil and light soya sauce, garnished with barbecued pork and vegetables. Variations of this exist with different types of noodles such as *bee hoon* (rice vermicelli) or *kueh teow* (flat rice noodles), or served in different sauces, such as Chinese barbecue sauce.

Kueh Chap – For the adventurous, a tasty soup dish with various pork spare parts.

Laksa – Not to be confused with *laksa* from other parts of Malaysia, Sarawak *laksa* has a taste of its own. Rice vermicelli is served in a rich coconut-based broth with strips of chicken, egg and bean sprouts.

Lok-lok – Various deep-fried snacks which are ordered by the skewer.

Lui Char – A traditional Hakka soup, bitter in taste, made of ground-up herbs and vegetables, served with rice and crushed peanuts.

Porridge – Rice porridge with mince pork, usually eaten for breakfast.

Rojak – A salad of pineapple, turnip and other vegetables tossed in a shrimp sauce.

Tomato Kueh Teow – Fried *kueh teow* with a sweet-and-sour tomato sauce: a Kuching speciality.

The Chinese also have their own version of *nasi campur*, inexplicably called 'Economy Fast Food.'

Most of the older *kopitiam* will open only for breakfast and lunch, and generally stop selling when they run out of their day's allocation of ingredients. A few stay open in the afternoons, but you will only be able to get drinks and a few snack items such as toast with *kaya* (coconut jam), soft-boiled eggs or Chinese buns. Newer *kopitiam* will generally stay open the whole day, with some of the stalls closing in the afternoons for a few hours.

Indian Gerai Mamak

In local slang, *mamak* means a Muslim of Indian descent, and *gerai mamak* describes a Muslim Indian restaurant descended from the humble *mamak* roadside stalls selling *roti* (flatbread cooked on a griddle) and *teh tarik* ('pulled' tea). While these are less common in East Malaysia than in Peninsular Malaysia owing to the lower concentration of Indian Malaysians there, they are very popular wherever you can find them. Usually there will be an Indian-style *nasi campur* buffet comprising a

'The venerable Chinese kopitiam can be found in abundance all over East Malaysia...'

large selection of curries. *Nasi biryani*, a rice dish prepared with a mixture of spices and served with a curry of your choice, and *mee* or *nasi goreng* will generally also be available. The most popular items at these places though, are their wide variety of flatbreads, which are prepared in spectacular fashion on a large iron skillet located at the front of the shop. *Roti* is usually served with curry gravy. Depending on the shop, there may be metal containers at the tables ready-filled from which you will spoon out your choice of gravy yourself, or someone will ask you which gravy you want. Usual choices are chicken, vegetable, or *dahl* (lentil) gravy.

Chapati – Flatbread made from whole wheat flour.

Murtabak – *Canai*-style flatbread stuffed with a variety of fillings such as meat (*murtabak daging*) or canned sardines (*murtabak sardin*).

Roti Bawang – A *roti canai* with onions.

Roti Canai – Fried flatbread made from white flour.

Roti Telur – A *roti canai* with egg.

Thosai – Thin, slightly crispy flatbread made from lentils and rice flour.

Thosai Masala – Spicy potato and onion mix wrapped in a *thosai*.

Various new variations of *roti canai* include *roti bom* (smaller but thicker *roti*) and *roti tissu* (paper-thin *roti*), both of which are worth trying. Some *gerai mamak* serve what is known as *banana leaf*, which is rice with a set selection of curries and chutneys traditionally served on a piece of banana leaf.

Hindu restaurants, while common in Peninsular Malaysia, are much rarer in Sarawak and Sabah. They are good bets for vegetarians, however.

Drinks

Malaysia has a long-standing history of coffee drinking quite distinct from other coffee cultures. However global chains such as Starbucks are making inroads into the country. Coffee in a *kopitiam* is traditionally made by repeatedly pouring hot water over coffee grounds filtered through a cloth bag, similar in shape to a sports sock. Tea is also made in a similar fashion using powdered tea instead of tea bags or loose-leaf.

Ordering coffee or tea in a *kopitiam* can be a confusing experience for a newcomer. *Kopitiam* will rarely, if ever, keep fresh milk or cream on hand. The two kinds of dairy available are condensed milk, which is thickened heavily sweetened milk, and evaporated milk, which is thickened but unsweetened. The default is condensed milk. Because of this, it is quite common for a tourist to order ‘coffee with milk’ and end up getting served a very sweet coffee, leading thereafter to a bungling conversation with the staff. Rarely does anyone leave that conversation any wiser. The following is a guide for ordering coffee or tea in a *kopitiam*:

Kopi/Teh (pronounced ‘tay’) – Coffee/tea with sweetened condensed milk.

Kopi/Teh ‘C’ – Coffee/tea with evaporated milk and sugar.

Kopi/Teh ‘C’ Kosong – Coffee/tea with evaporated milk but sans sugar.

Kopi/Teh ‘O’ – Coffee/tea with sugar.

Kopi/Teh ‘O’ Kosong – Coffee/tea sans sugar.

Malaysians tend to drink their coffee or tea with enough sugar in it to rot the tusks off an elephant. If you’d prefer to keep your teeth healthy, you can add the ‘*kurang manis*’ suffix to your order (it means ‘less sweet’ in Malay). If you want it without sugar, say you want it *pahit* in Indonesia, *tidak gula* in Malaysia. *Susu* (milk), often condensed milk, is frequently included in Malaysia; *tidak susu* or *hitam* (black) is the way to opt out.

A regional speciality tea preparation known as *teh tarik* (literally ‘pulled tea’) can be ordered from Indian stalls or restaurants. The tea is poured back and forth between two containers, one held high and the other low, to work air into it and to mix in the condensed milk (it is only ever served with condensed milk). The pouring action creates the optical illusion that a ‘rope’ of tea is being pulled from the lower container to the upper one. The result is a creamy, frothy brew, and is a very popular breakfast drink. Do not try to order this in a Chinese *kopitiam* as you’ll just get funny looks.

Apart from Western soft drinks, freshly made traditional Asian drinks can usually be ordered as well. Some of the local drinks are traditional soy milk, *air limau* (limeade made from key limes), *air tebu* (sugar-cane juice), *air kelapa* (coconut juice) usually served in the young coconut (*kelapa muda*) – spoon out the inside after drinking for maximum delight.

Check to see that they are made on-the-spot rather than served from a can, especially for sugar-cane juice. Additionally, you may spot pastel-coloured posters plastered randomly on the walls of the shop. These are advertisements for other drinks that are available.

Other favourite drinks include soursop, a dark green, prickly fruit with a slightly acidic, tropical-flavoured pulp; and *kalamansi* – a tiny lime. Juices come in two varieties, *air* (water) or *es* or *ais* (ice, a blended concoction). *Air* normally includes sugar unless you stipulate you want just juice (*hanya air* or *air saja*). *Es* drinks habitually include condensed milk and sugar.

Look out for *air kelapa*, coconut juice served in its shell. The top of the coconut is usually hacked off and a straw is inserted. A spoon is provided to dig out the tasty white flesh once you’ve drained the juice..

Try *teh tarik* at Indian tea stalls. The tea is poured from one cup at a height to another lower one. The tea has a head of froth when served. *Teh alia* is the same tea but with ginger added for bite.

Environment

You might think that an island has a fairly simple environment, but Borneo is one of the most geologically complex and biologically diverse places in the world. Situated where three great plates of the earth's crust join, and composed of fragments from old continents, Borneo is an intricate mosaic of rocks, plants and animals derived from both Asian and Australian sources. Now an island, Borneo owes much of its astounding biological diversity to the fact that as recently as 10,000 years ago it was joined with the Asian mainland, providing a corridor over which plants and animals migrated to the otherwise isolated island.

The world-famous forests of Borneo are critically imperiled by logging and the northern third of the island administered by Malaysia is one of the few places in the world where tropical rainforests can be found in a soon-to-be-fully developed nation. Thus, Borneo will be an important test-case for conservation policies in developing countries.

THE LAND

At 740,000 sq km, Borneo is the third largest island in the world after Greenland and New Guinea. Straddling the equator between Vietnam and Java, the island lies in an evergreen climate characterised by abundant amounts of year-round rain. While rain supports lush rainforests, it also erodes the landscape and leaches nutrients out of the soil, thus defining Borneo more than any other factor. Ironically, rainforests cloak the land so densely that Borneo has one of the most poorly understood geologic landscapes in the world.

Also hidden from sight is one of Borneo's most important geologic features – a continental shelf that extends underwater from Peninsular Malaysia to Sumatra, Borneo and Java. Western Borneo is actually the southeasternmost tip of the Eurasian continental plate, even though above water it seems to be a separate island. Sticking out into the South China Sea by itself, Borneo is being rammed from the east by the Pacific plate and from the south by the Indo-Australian plate.

It is thought that over the course of at least 100 million years, Borneo took shape as parts of six different continental fragments (terranes) collided at the tip of the Eurasian plate, squeezing together ancient ocean-basins and scraping up seafloor sediments in the process.

Western Borneo exhibits what is called a 'basement block', so named because it is part of the original continental shelf; while rocks in the rest of Borneo show evidence of originating in shallow- to deep-water seas at the edge of ancient continental landmasses. Compressed and altered by time, these ancient sand and mud sediments now show up as rocks such as sandstone and shale.

Borneo is a remarkably flat island, with over 50% of the landscape less than 150m in elevation and covered in lush rainforest and swamp forest drained by large, slow-moving rivers. There are mountains in the interior of Borneo, but unlike the rest of the Indonesian and Philippine islands there are no active volcanoes because Borneo itself is part of a very stable continental shelf.

Rather than being created by volcanoes, the island's mountain chains resulted from forces that lifted sea bottoms out of the water and often crumpled them into jagged hills. Uplift began just north of Sarawak's Lupar River about 40 million years ago, and progressively moved north until it culminated in Sabah about 17 million years ago. Now exposed to abundant

rainfall, these uplifted mountains have since eroded vast quantities of sediment into adjacent lowlands and coastal areas.

Extensive pockets of limestone in northern Borneo show where ancient coral reefs were buried under thousands of metres of sediment, then subsequently uplifted to form mountain ranges. Gunung Mulu National Park in Sarawak is one of the world's premier limestone landscapes, including sheer 45m limestone pinnacles and the world's largest cave chamber (large enough to park eight 747 jets end to end).

Mountains include 4095m Mt Kinabalu in Sabah, the highest mountain between the Himalayas and New Guinea and arguably the epicentre of Borneo's fabulous biodiversity. This colossal dome of granite forced through the earth's crust as molten rock 10 to 15 million years ago and continues to rise about 5mm a year. Despite its location just north of the equator, Kinabalu was high enough to be exquisitely sculpted by glaciers during the ice ages, and is today one of Borneo's premier destinations.

WILDLIFE

From breathtaking coral reef to mind-boggling rainforest, Borneo is one of the greatest showcases of life on the entire planet. It's hard to comprehend how so many species have come to live in one place, but part of the reason lies in the complex origin of the island. Formed from the collision of different continental fragments, each acting much like an ark carrying groups of ancient species, Borneo sits at the junction of Asian and Australian biomes and shows elements of both.

Borneo's strongest affinity is with the Asian mainland because Borneo becomes connected to Peninsular Malaysia when sea levels drop. This has happened on at least several occasions, once about 50 million years ago, and more recently during the ice ages that lasted from 2 million years ago until 10,000 years ago. Each time, plants and animals travelled across the land bridge and colonised Borneo, bringing new species and gene pools to the island.

In one measure of how rich the wildlife of Borneo is, it has been reported that 361 new plants and animals have been discovered since 1996, with an additional 52 new species discovered between July 2005 and December 2006.

Despite the superficial abundance of life, one of the unfortunate ironies is that tropical soils are usually of poor quality because heavy rainfalls leach out nutrients. As soon as forests are logged or farmed they revert into the highly degraded *padang* (field or grassy area) wastelands that now cover vast swathes of the island. Sadly, the loss of Borneo's forests and wildlife is occurring on a staggering scale and without immediate action the end is in sight (see below).

Habitats

Borneo has a number of distinctive habitats, and knowledge of these habitats will help you find specific plants and animals. In some cases, the best remaining examples of these habitats are easily viewed in national parks.

CORAL REEF

Borneo's coral reefs are part of the so-called 'Coral Triangle', a fantastically rich portion of the South China Sea that is home to 75% of the world's coral species and over 3000 types of marine fish. Reefs are in the best shape along the northeast coast of Borneo where the water is clear and free of sediment. Sipadan Island in Sabah and the Derawan Archipelago in East Kalimantan have the greatest concentrations of reefs, while protected areas

For an excellent, colourful introduction to Borneo's environment check out *Wild Borneo* by Nick Garbutt.

'From breathtaking coral reef to mind-boggling rainforest, Borneo is one of the greatest showcases of life on the entire planet.'

include Tun Sakaran Marine Park in Sabah and Talang-Satang National Park in Sarawak.

DIPTEROCARP FOREST

Most of the lowland forest in Borneo is dominated by one family of trees called dipterocarps. More than 250 species of these magnificent, towering trees are found on the island, where they form the tallest and most diverse rainforests on earth – a single hectare of dipterocarp forest may have over 200 species of trees! Of the countless animals found in a dipterocarp forest, none are as interesting as the many types of gliding animals. In addition to birds and bats, there are frogs, lizards, snakes, squirrels and lemurs, which ‘fly’ between trees. Excellent viewing opportunities can be found at Danum Valley Conservation Area in Sabah, but remnants of dipterocarp-forest habitats are found in many other parks.

FRESHWATER SWAMP FOREST

Low-lying floodplains in coastal areas support a rich forest of tall trees. Home to the Bornean pygmy elephant, orangutan and proboscis monkey, these vital forests have been extensively converted to oil plantations. On sites where the soil is more acidic, decaying material accumulates and creates a specialised forest known as peat swamp that covers vast swathes of coastal Sarawak, and West and Central Kalimantan. Swamp forests play a crucial role by acting as sponges that absorb rainwater and release it slowly to a wider environment during the dry months. These forests are found in many coastal parks such as Tanjung Puting National Park in Central Kalimantan or Kutai National Park in East Kalimantan.

HEATH FOREST

Acidic sandy soils that lack nutrients are home to a very important and highly specialised habitat known in Borneo as *kerangas* (heath forest). Found in both coastal and montane areas, heath forest is increasingly restricted to protected coastal areas like Bako National Park or incredibly remote mountain tops like the Maliau Basin in Sabah. This forest type is composed of small, densely packed trees that seldom top 20m in height. Due to lack of nutrients, plants of the heath forest have unique adaptations to help them protect their leaves and acquire nutrients. For example, many plants obtain food by providing homes to ants. Heath forest also has the world’s greatest diversity of pitcher plants that eat insects trapped in chambers full of enzyme-rich fluids.

MANGROVE

The watery, tidal world where land meets sea is one of the most biologically productive habitats on earth. Growing precariously in this odd mix of salt and fresh water, mangrove plants stand on stiltlike roots that keep them out of the suffocating mud. Uncounted marine organisms and nearly every commercially important seafood species find sanctuary and nursery sites among these roots. Charismatic wildlife species include the bizarre proboscis monkey and the mudskipper, a fish that spends much of its time out of the water. Mangroves once ringed virtually the entire island, especially around river mouths, but increasingly they are limited to places like Bako National Park near Kuching.

MONTANE FOREST

On mountains over 900m, dipterocarp forest gives way to a magical world of stunted oaks, myrtle and laurel trees. This dripping, cloud-drenched

montane forest is chock-full of ferns, rhododendrons, lichens and moss. It is also the site for a stunning wealth of orchids. More than 3000 species of orchids are found in Borneo, and Mt Kinabalu alone has over a thousand species! Visitors from around the world sojourn to the lower edges of Borneo’s montane forest with hopes of seeing the legendary rafflesia flower (see p51) at places like Gunung Gading National Park in Sarawak.

Animals

If Borneo has one symbolic animal it would be the orangutan, or ‘man of the forest’. At the top of every visitor’s wish list, this majestic great ape is a wonder to behold in its native environment, and even the most seasoned traveller will feel a rush of awe if they cross paths with a wild orangutan. It is almost impossible to deny the appeal of a 100kg animal whose facial expressions and obvious intelligence come eerily close to our own.

Ranging over large areas of native forest in search of fruiting trees, the orangutan has suffered greatly due to hunting and logging pressure, and in fact some scientists speculate it may go extinct in the wild without increased protection. Wild orangutans are now difficult to find except in places like Danum Valley Conservation Area or the Lower Kinabatangan Wildlife Sanctuary; but many visitors are content to observe rehabilitated animals at the Sepilok Orang-Utan Rehabilitation Centre in Sabah, or Semenggoh Rehabilitation Centre in Sarawak.

Equally thrilling may be the experience of hearing the loud, whooping songs of gibbons ringing through the rainforest at sunrise. These primates move through the forest canopy with such speed and agility that it seems as if they are falling sideways as they swing effortlessly from branch to branch. One species occurs in southwestern Borneo and can be observed at Gunung Palung National Park; another species is found throughout northern Borneo.

Very little is known about Borneo’s two largest land mammals, the pygmy elephant and the rhinoceros. In fact, a Bornean rhinoceros was briefly caught on film for the first time ever in June 2007 and only a few hundred are thought to remain in the wildest parts of Sabah. Borneo’s elephants have likewise been a mystery, but new genetic evidence puts to rest the theory that humans introduced them to the island relatively recently. It turns out that they have been on the island possibly as long as 300,000 years and have evolved into a unique pygmy race (adult females are only 2m tall!). Of the 1000 estimated to live in northeastern Borneo, the largest elephant population is thought to roam the Lower Kinabatangan Wildlife Sanctuary where they’ve come into increasing conflict with the owners of vast oil palm plantations.

If any one animal ties the habitats of Borneo together, it would be the bearded pigs that are encountered in nearly every forested area. Following well-worn paths, these 100kg animals sometimes gather into large herds and migrate incredible distances in search of nuts and seeds. Although they are an extremely popular game animal, they are one creature that hunters and predators truly fear. Be wary of these unpredictable animals and their sharp tusks – they are capable of eviscerating a human in a split second.

At the small end of the scale, few animals are more surprising than the 2kg lesser mouse deer, a rabbit-sized creature that looks like a miniature deer with long protruding canines instead of antlers. Skittish and generally nocturnal, they can sometimes be seen during the day by quiet hikers.

It would be hard to miss the fantastic assortment of birds that fill the forests of Borneo with their ethereal calls. At the top of the list are the eight boldly marked hornbill species. With loud whooping calls, the 105cm-long rhinoceros hornbill is the most obvious hornbill, but when the 125cm-long helmeted hornbill swoops across the sky you might think you’re seeing a

‘On mountains over 900m, dipterocarp forest gives way to a magical world of stunted oaks, myrtle and laurel trees.’

Gibbons swing by their hands, a unique mode of travel called brachiation that isn’t entirely perfect: most gibbons have bone fractures from falling.

pterodactyl instead. Hornbills play an extremely important ecological role by travelling great distances and dispersing seeds of rainforest fruits that they eat. Revered and hunted by Borneo's indigenous peoples, hornbills are highly threatened by ongoing logging practices.

Although Borneo has one of the most fabulous displays of wildlife in the world, you may find your attention riveted instead on the smallest of organisms. Consider the leech, one rainforest creature that every visitor soon comes to know and dread. They come at you from every direction in the forest, humping along the ground in eager quest for your blood. Slimy and hard to pick off, they slip under your clothes and take up residence in uncomfortable places. They cause no great harm, but do inject anticoagulant juices that keep their bites bleeding for hours afterwards.

And if that wasn't enough, you may encounter night-time swarms of raiding fire ants that sweep down trails and through houses like a living blanket. Steer clear of these fierce ants or you might get some stings you won't soon forget.

Plants

Borneo is a world centre of plant diversity – in fact it has as many plants (about 15,000 species of flowering plants) as the entire continent of Africa, which is 40 times larger than the island. So diverse are Borneo's forests that virtually every tree you encounter on a hike might be a different species and you could hike for days to find two examples of one tree. It would take a lifetime to learn the 3000 different species of trees alone, not to mention the thousands of orchids, or the other numerous groups of fascinating plants.

When trees are this spread out they must evolve special ways to disperse their pollen and seeds, and in Borneo this task is accomplished by animals. Orangutans and hornbills, for instance, travel great distances in search of absolutely scrumptious fruits – including durian, longsat and rambutan – offered as temptations by trees. You may even see trees attracting the attention of passing animals by sprouting fruits directly on their trunks, a very odd adaptation called cauliflory.

At the other end of the scale, there may be so many seed-eaters that trees have to find ways to avoid having all their seeds eaten. The world-famous dipterocarp trees solve this problem through a strategy called mast seeding, whereby every dipterocarp tree in the forest produces vast quantities of seeds once every six years or so and no seeds in the intervening years. The sheer numbers of seeds produced completely overwhelm the seed-eaters and ensure that a few seeds survive. Because dipterocarp seeds are winged and spin gracefully as they fall, the dispersal of millions of dipterocarp seeds during a mast seeding event is one of the greatest spectacles that you can see on planet Earth.

Plants typically struggle to survive on the thin, nutrient-poor soils of Borneo. In response, trees may hold themselves upright with wide flaring buttresses rather than deep root systems. Although smaller flowering plants don't have to worry about growing tall they still require hard-to-find nutrients that they may obtain by eating insects (pitcher plants) or by creating shelters for ant colonies that bring food to the plant.

It's a strange world of plants in Borneo and some of the most famous ones are strangler figs. Starting life as tiny seeds, which are defecated by birds in the rainforest canopy, strangler figs then send down spindly roots in search of the ground. Eventually, the fig grows large enough to embrace its host tree in a death-grip. Once the host tree rots away the giant fig stands upright on a fantastic hollow latticework of its own woven roots. It may seem that figs are all bad, but in fact they are one of the most important fruiting

The rainforests of Borneo are exposed to twice as much sunlight as a temperate forest, but nearly all this energy is trapped in the canopy, so few animals live on the forest floor.

THE EXTRAORDINARY RAFFLESIA

People revert to words like bizarre, awe-inspiring or enigmatic upon viewing the rafflesia flower. One of the greatest wonders of the plant world, the 1m-wide flower can elicit both astonishment at its incredible size, or revulsion at its smell, which has been likened to the smell of a rotting carcass. Even more amazing is the fact that this oddity erupts directly from the forest floor, with no visible stems or leaves.

The rafflesia plant is actually a parasite that lives entirely on the roots of a grapelike vine in the genus *Tetrastigma*. The parasite does not produce any food of its own, but instead forms a network of microscopic filaments that penetrate the vine's roots and steal water and nutrients.

In preparation for flowering the parasitic rafflesia sends up a cabbage-like bud that grows on the forest floor for a year or more before blossoming. The flower itself is a giant succulent creation with red colour and white splotches. After two or three days the flower begins to deteriorate and within two weeks it is reduced to a blob of black slime.

Seeing a rafflesia is a very special treat. Not only are the flowers themselves fleeting and rarely encountered, but poaching and habitat loss has greatly reduced their numbers. Of the nine species thought to occur in Borneo, three have not been seen in the past 60 years.

The odds of finding a rafflesia on your own are close to nil, but don't despair. Numerous private plots around Poring Hot Springs on Mt Kinabalu are closely monitored for flowers, with owners advertising prominently along the main road whenever one of their plants is in bloom. Likewise, rangers at Tanbunan Rafflesia Reserve, just southeast of Kota Kinabalu, monitor the forest closely and admit visitors to view flowers if you call in advance. In Sarawak try Gunung Gading National Park.

plants in the entire rainforest ecosystem and everything from orangutans to pigs and birds relies on fig crops for their survival.

NATIONAL PARKS

Despite the fantastic natural wealth of Borneo there are few examples of well-managed parks and preserves, and very little land is strictly protected (see below). Furthermore, access to many parks is difficult and limited, and travel within the rainforest is extremely challenging, making these destinations better suited for adventurous hardy travellers. And, while it's possible to list the amazing animals found in these parks, the reality is that in most cases these animals are rarely observed. Fortunately, a handful of parks have well-established access, lodging, and recreation opportunities for a broad range of visitors. For more on national parks in Borneo, see p57.

ENVIRONMENTAL ISSUES

If left intact, the vast forests of Borneo would provide a limitless supply of valuable resources for countless generations. In fact, the true wealth of rainforest ecosystems is a closed loop to the extent that once the forest is logged and fragmented the entire system falls apart. Soils become degraded, waters become silted, plants and animals go extinct, and native human communities suffer grave ills. Perhaps more terrifying is the fact that rainforest ecosystems may not be recoverable once they are lost, and even limited logging appears to greatly diminish the reproductive capacity of the remaining trees.

Unfortunately, the governing bodies of Borneo have a terrible environmental legacy despite the best efforts of local and international environmental groups. Far too frequently, rainforests are viewed as an impediment to 'progress' or as political spoils for those in power, with a handful of political elites profiting massively from the cutting of the forests.

In February 2007 Sabah, Sarawak, and Kalimantan jointly signed a 'Heart of Borneo' agreement spearheaded by the WWF. However, this forward-thinking

Visiting Sarawak? You'll love the details found in *National Parks of Sarawak* by Hans Hazebroek and Abang Kashim bin Abang Morshidi.

plan to protect 240,000 sq km of forest fell under immediate assault by international companies bent on profiting from Borneo's valuable resources. By May 2007 a prominent group of 1500 scientists from 70 countries labelled the situation in Borneo a 'crisis' and called for urgent action. New satellite images are revealing that over 50% of Borneo's forests have already been cut. And at current rates of logging, it is estimated that 98% of orangutan habitat will be gone by 2022. You would think that national-park status would protect an area but it is now estimated that about 35 of Borneo's 41 national parks have been logged in some way, much of it occurring during a period of political upheaval in the late 1990s.

Ironically the most serious current threat comes from the European Union decision to replace 10% of its transport fuel with biodiesel. As a consequence, palm oil prices have risen dramatically since 2006 and vast tracts of Borneo rainforest have been cleared to make way for new oil plantations (one project alone is slated to clear 1.8 million hectares). So lucrative are these operations that social and environmental issues are being swept aside with hardly a thought.

Advocacy groups make the claim that companies are illegally setting fire to pristine rainforest then buying the degraded land at a greatly reduced price after the fire, an all-too-common strategy in Borneo. In 1982, fires set by slash-and-burn farmers and logging companies ended up destroying more than 4 million hectares of rainforest, including half of the newly established Kutai National Park, making it the largest fire ever recorded on Earth.

Not only are many of these rainforest trees ecologically valuable, but these high-quality hardwoods are also treasured for their beautiful woods. It is tragically ironic that the majority of trees logged in Borneo are instead

From 60% to 80% of Borneo's tourism revenue leaks out of the country into the hands of foreign investors, while nearly all of the remaining money goes as profit to local business elites.

WHAT YOU CAN DO

What can you do on an island where grave injustices have been and continue to be perpetrated against its native peoples, where corrupt businesses strip away resources under the protection of local police and top politicians, and where even the most powerful international aid agencies flounder? The environmental situation in Borneo is a crisis of staggering global ramifications and action is urgently needed.

It may be that some of the best work being done in Borneo is by WWF Malaysia (www.wwf-malaysia.org), including forest and species protection, education and international advocacy. Recent WWF achievements include obtaining the first-ever video of a wild rhinoceros in Borneo and gaining support for a vast 'Heart of Borneo' preserve.

Travellers might check out the Wild Asia website (www.wildasia.net) to learn more about responsible tourism in the region. They suggest trying to give your business to operators that follow guidelines established by an internationally established body like Green Globe 21. However, you may find responsible tourism options limited on the island of Borneo so Wild Asia recommends being active in giving feedback to local operators, telling them what you like and what's important to you.

Even though a few sustainable forestry efforts are starting up in Sabah, you can be almost certainly assured that most wood products come from highly degraded forests or illegal logging operations. Please be conscious of all wood products you buy, whether you are travelling or back at home. Wood products made in China or sold in import stores nearly always come from tropical hardwoods. Even widely available plywoods are likely made from trees logged in Borneo (an estimated 80% of the plywood sold in the United States for instance), and sold in home-improvement stores as 'red oak'. Wood dowels (also found in broom handles, mops, toilet bowl plungers and paintbrush handles) are nearly all made from an endangered tree found in Borneo. Rayon fabric is made from wood pulp that often comes from rainforest trees.

BIOFUELLING FOREST DESTRUCTION *Muhammad Cohen*

The fad for biofuels – using crops as a substitute for fossil fuels – is the latest accelerator of Borneo's deforestation. Record prices for palm oil are driving increased acreage for palm-oil plantations that spark destruction of forests and their inhabitants.

For starters, creating a plantation means logging the plantation area. Because oil palms take five years to produce a crop, timber sales subsidise the preproduction phase. In some cases, unscrupulous operators get a plantation concession – more easily obtained than timber concessions – log, then leave the land denuded. Setting a fire may complete land clearing.

While palm oil is an extraordinarily versatile food product, it's a remarkably lousy fuel. Studies show that more carbon is released from the conversion of forests to palm plantations than saved through replacement of fossil fuels with the palm oil produced. The equation is especially unbalanced when the plantation is located on peat swamp forest, increasingly the case in Kalimantan, and off the charts when burning is the final step in clearing.

Substituting oil palms for forest isn't an environmental plus. Plantation monocropping robs local wildlife of native food-sources, increases conflicts between wildlife and humans – plantations consider orangutans pests – and pushes Dayak shifting cultivators toward peat swamps, where slash and burn methods release vast quantities of carbon, often triggering massive fires. Many orangutan advocates now recommend boycotting palm oil products and discouraging new plantations as the best steps to help Asia's great ape survive.

Biofuel presents a new irony: honest people can help destroy the rainforest by trying to save it.

converted into low-grade plywood to feed the insatiable building boom in places like Japan, the European Union and the United States.

It is hard to be optimistic about the fate of Borneo's incredible forests and animals, especially in the relatively lawless provinces of Kalimantan where well-intentioned plans are sabotaged by local officials and virtual lack of oversight from national institutions. The World Bank estimates that \$3 billion worth of timber is illegally exported from Borneo each year, but even World Bank agents have been ushered off the island by police so little is known about the true scale of these operations.

The situation is somewhat better in Sabah and Brunei, although it doesn't mean that forests aren't still logged at an unsustainable rate. WWF reported in August 2007, for instance, that more than 40% of Sabah's forests have already been lost to logging and oil plantations. Visit the United Nations Environment Programme site (www.grida.no) and search 'Borneo deforestation' and you will be directed to an excellent map of the current situation in the region. Much is said and promised about protecting the resources of Borneo, but it remains to be seen how much is enacted before it's too late.

Borneo Outdoors

Borneo is Southeast Asia's premier adventure-sports destination. If you're one of those people who like to experience a place by climbing it, diving it, paddling it or trekking it, then you're bound to love the island of Borneo.

For starters, Borneo has some of the best jungle-trekking of anywhere in the world. While forests are disappearing at an alarming rate, vast swathes of intact tropical rainforest remain in the middle of island. If you've never walked through primary tropical jungle, the experience is likely to be a revelation – you simply won't believe the biodiversity (or the leeches, for that matter).

Towering above the forests of Borneo are some brilliant mountains. Even nonclimbers know about 4095m Mt Kinabalu, the highest mountain between the Himalayas and the island of New Guinea. If you're a hiker or climber, one look at a picture of the craggy peaks of this mountain and you're sold – you're not going to be happy until you've set foot on the summit.

But the story doesn't end there: Borneo is capped by a mountain range that runs from north to south almost the entire length of the island. For adventurous climbers, there are interesting and challenging peaks to climb in Sabah, Sarawak and Kalimantan.

Borneo's mountains are literally porous with caves, including some of the world's largest. Sarawak's Gunung Mulu National Park holds the world's largest single cave passage and it's a great place to get a taste for the delights of caving. Sarawak is also home to Niah Caves, a couple of awesome caverns that have to be seen to be believed.

The mountains and jungles of Borneo are drained by some of Southeast Asia's longest rivers. Whether it's tearing up one of these rivers in a speed-boat, rafting down one of them in a rubber raft, or paddling down one of the upper tributaries in a kayak, you'll find that these watery highways are perhaps the best way to experience the island of Borneo.

Finally, there is the undersea world. Borneo has some of the richest and most varied coral reefs in the world. On either side of Sabah, you'll find world-class dive sites: Layang Layang, a ring of coral 300km offshore in the South China Sea, and Pulau Sipadan, a coral pinnacle rising from the floor of the Sulu Sea. Even if you don't make it to one of these sites, you'll find excellent snorkelling around the offshore islands all around Borneo.

MOUNTAIN CLIMBING

Sabah's Mt Kinabalu (p106) dominates northern Sabah the way it dominates the mind of most adventurous travellers headed to Borneo. This 4095m peak simply begs to be climbed and there is something magical about starting a climb in humid tropical jungle and arriving in a bare rocky alpine zone so cold that snow has been known to fall. It's not just the transition from hot to cold that makes it so interesting; it's the weird world of Kinabalu's summit plateau that makes it among the world's most interesting peaks. It's got a dash of Yosemite and a pinch of Torres del Paine, but at the end of the day, it's all Kinabalu. Be warned that an ascent of Kinabalu is no joke, but if you're reasonably fit and well prepared, it may well be the highlight of your trip to Borneo.

A little further down Sabah's Crocker Range, you'll find 2642m Mt Trus Madi (p125), which attracts climbers who like their mountains without the crowds. Like Kinabalu, it's generally a two-day climb, but unlike Kinabalu, you'll usually have the summit to yourself. The highlight of the climb is the relatively intact forest that you trek through for much of the way. For those

Mt Kinabalu was first climbed in 1888 by Briton John Whitehead.

BORNEO: NATURE'S PLAYGROUND

Just what is it that makes Borneo an outdoor paradise?

First, Borneo sits right on the equator, in the heart of maritime southeast Asia. Over the course of millions of years, Borneo has been connected to the rest of southeast Asia by a series of land bridges. These bridges, while they lasted, allowed vast amounts of genetic material to flow onto the island, making it a kind of steamy tropical Noah's Ark. When the seas covered over the bridges, the life on the islands was allowed to evolve into fantastic new forms. The result is an island that is one of the world's great biodiversity hot spots.

Second, most of Borneo is located inside the so-called 'Coral Triangle'. Bounded by the Philippines, Borneo, Indonesia and the island of New Guinea, this region of the far-western Pacific is the centre of the world's marine biodiversity and is home to the world's richest coral reefs and most vibrant and varied fish populations.

Third, the island is blessed with some truly peculiar geological features, including some incredible limestone caves and some impressive mountain ranges. Towering above them all is 4095m Mt Kinabalu, the highest mountain between the Himalayas and the island of New Guinea.

Thus, both above and below the sea, Borneo is a kind of vast natural theme park for adrenalin junkies and nature lovers.

who have a little time and patience to make the arrangements, this is a very rewarding and seldom-climbed peak.

Down in Sarawak, you'll find more brilliant climbing, starting with the famous 2377m Gunung Mulu (Mt Mulu; p205). If you're a real glutton for punishment, you'll probably find the five-day return trek to the summit of this peak to your liking. Those who make the journey experience a variety of pristine natural environments starting with lowland dipterocarp forest and ending with rhododendron and montane forest.

A much more popular trek in the park is the one-day return trek up to the Pinnacles (p205), on the shoulder of 1750m Gunung Api. These freakish limestone arrowheads that jut up out of the forest on this mountain are among the strangest sights in all of Borneo and they're well worth the brutal slog up to get there (not to mention the equally brutal hike down). If you're fit and keen, you'll probably love the Pinnacles.

Also in Sarawak, the Kelabit Highlands (p212) have several peaks in addition to great longhouse treks (see p56). The most popular trek is the six-day return trip up 2623m Gunung Murud (p215), which will test anyone's endurance. Also popular is the three-day return trip up 2046m Batu Lawi (p215), which allows a good view of the stunning spire of the 'male peak' of Batu Lawi. Standing like a sentinel over the highlands, this lovely peak is sometimes visible on the flight into Bario.

Kalimantan has several notable parklands and while most areas are best suited to trekking, there are a few good climbs. In the area around Sintang (p242) hikers can climb to the peak of Gunung Kelam, seeing butterflies, waterfalls and great vistas along the way. South of Sintang lies the Bukit Baka-Bukit Raya National Park, and while tourism infrastructure is sparse, the broad rivers, forested panoramas and giant rafflesia (the world's largest flower; see p51 for more information) are worth the exertion.

If tracking down a blooming rafflesia is your quest, Gunung Poteng (p246) is 12km east of Singkawang and only takes two hours to climb. While each massive flower blooms only once a year, there are multiple blooming periods that afford a good chance to spot one.

A holy day-hike, Gunung Bondang (p260), of religious significance to some Dayaks, is in the mountains north east of Muara Teweh and features waterfalls, stone carvings and orchids.

Mountains of Malaysia, by John Briggs, though difficult to find, is the best book on climbing routes in Sabah and Sarawak.

Finally, the Apokayan Highlands (p285), sheltered by white-water rapids from the boats of loggers, have some fine trekking and climbing. The Kayan Mentarang National Park traces the border with Sarawak and mixes natural and cultural attractions in a great selection of guided expeditions. Highlights include a trail to the high pass at Apo Napu, routes through pristine forests to Dayak longhouses, waterfalls and burial caves.

TREKKING

The island of Borneo is one of the best places in the world to experience one of the world's fast-disappearing treasures: old growth (primary) tropical rainforest. A look down on the island with Google Earth reveals a swathe of intact jungle around the northern end of the Sarawak–Kalimantan border, as well as several intact areas in central Sabah and Brunei. For nature-lovers, a hike through this forest is an opportunity not to be missed.

Sabah's Danum Valley Conservation Area (p145) is one of the few places on earth where you can experience intact rainforest while staying in an international-class resort. It's also one of the best places on earth to see wild orangutans in their natural habitat. The treks here are all very short and easily managed by most people.

At the opposite end of the spectrum is Sabah's Maliau Basin Conservation Area (p154), which is only really accessible to fit and adventurous hikers. Those who make the slog up over the basin wall and down into the basin itself find themselves rewarded with a Jurassic Park–like hidden world of truly awesome biodiversity. If you don't mind working up a sweat and making a few donations to the leeches, this place should rank high on your list.

Sabah's Kinabalu National Park (p106) also has some great trekking, which is often overlooked by hikers who make a beeline for the summit of Mt Kinabalu. The 6km Liwagu Trail (p110) is one of the finer walks in Sabah and it would be swarming with people if it weren't for the fact that it's located below Borneo's most popular hike of all, the Kinabalu Summit Trail. It's a good introduction to a dipterocarp forest and it can be undertaken by anyone of moderate fitness, especially if you walk it top down.

Of course, Borneo's real trekking paradise is to be found in Sarawak's Kelabit Highlands (p212), which offer the closest thing to Himalayan teahouse treks in Borneo. The Kelabit Highlands are a hanging valley in northern Sarawak, right up against the border with one of the wilder parts of Indonesian Kalimantan. With relatively cool temperatures, a network of winding rivers and fairly intact primary- and secondary-growth forest, the Highlands are a natural trekking destination. Best of all, the area is home to the incredibly hospitable Kelabit people, many of whom live in longhouses scattered about the Highlands. It's possible to do multiday treks here, stopping each night at a different longhouse, where you dine on the fruits (and, most likely, animals) of the surrounding jungle.

Not far away, Sarawak's Gunung Mulu National Park (p205) also offers some fine jungle trekking. Around park headquarters, there are several plankwalks through the jungle that allow the timid and leech-averse to experience Borneo's incredible rainforest. More adventurous trekkers can undertake the famous Headhunters Trail (p209), which involves two days of jungle trekking and a night in an Iban longhouse, with the possibility of a side trip up to see the bizarre Pinnacles (see p208).

Down at the other end of Sarawak, Bako National Park (p172), just north of Kuching, offers trekking through a variety of coastal forest and brush environments and a good chance of spotting Borneo's famous proboscis monkeys. An easy overnight trip out of Kuching, this park has the best hiking in western Sarawak.

(Continued on page 65)

(Continued from page 56)

Most people associate Brunei with oil rigs and sultans, but few realise that it's also home to some of Borneo's best-preserved rainforest. Ulu Temburong National Park (p234), in Brunei's Temburong District, is right in the middle of one of Borneo's largest stands of intact dipterocarp rainforest and the trails and canopy walkway here allow you to experience it 'up close and personal'.

CONSIDERATIONS FOR JUNGLE TREKKING

Jungle trekking can be one of the true highlights of a trip to Borneo. However, to the uninitiated, jungle trekking can be something of a shock – like marching all day in a sauna with a heavy pack strapped to your back. As a general rule, distances and climbs in the tropics feel about double what they do in temperate regions. To make the experience as painless as possible, it's necessary to make some crucial adaptations including the following:

- On overnight trips, bring two sets of clothing, one for hiking and one to wear at the end of the day (keep your night kit in a plastic bag so that it stays dry). Within minutes of starting out, your hiking kit will be drenched and will stay that way throughout your trip. Never blur the distinction between your day kit and your night kit; if you do, you'll simply find that you have two sets of wet clothes.
- If you'll be travelling through dense vegetation, wear long trousers and a long-sleeved shirt. Otherwise, shorts and a T-shirt will suffice. Whatever you wear, make sure that it's loose fitting.
- Bring fast-drying synthetic clothes. Once cotton gets wet, it won't dry out until you bring it to the laundry shop back in town after your trip (and let's not even mention what it will smell like).
- It can be cool in the evening in Borneo, so bring a polypro top to keep warm.
- Unless you like a lot of support, consider hiking in running shoes. It's hard enough hiking in the tropics as it is; clomping around with heavy mountaineering boots is just masochism.
- Buy a pair of light-coloured leech socks that fit your feet. You won't find these in Borneo, so buy them online before coming. For more on leeches, see the 'Leeches Suck...Blood' boxed text in this chapter (p67).
- Drink plenty of water. If you're going long distances, you'll have to bring either a water filter or a water purification agent like iodine (most people opt for the latter to keep weight down).
- Get in shape long before coming to Borneo and start slowly – try a day hike before setting out on a longer trek.
- Always go with a guide unless you're on a well-marked, commonly travelled trail. Navigating in the jungle is extremely difficult.
- Bring talcum powder to cope with the chafing caused by wet undergarments. Wearing loose underwear, or better yet, no underwear at all, will also help prevent chafing.
- If you wear glasses, be sure to treat them with an antifog solution (ask at the shop where you buy your glasses), otherwise, you may find yourself blinded by fog within minutes of setting out.
- Your sweat will soak through the back of your backpack. Consider putting something waterproof over the back padding of your pack to keep the sweat out of your pack. Otherwise, consider a waterproof stuff sack.
- Consider bringing a small pair of binoculars that you can keep on your pack's shoulder strap. You'll be happy you have these when your guide points out wildlife in the treetops.
- Keep your camera in a Tupperware or similar container with a pouch of silica gel or other dessicant in there.

Parks of Malaysia, by John Briggs, is a useful resource for those planning a thorough exploration of the parks of Sabah and Sarawak.

The Kinabalu giant red leech can grow up to 30cm in length. Luckily, it doesn't feed on humans.

Kalimantan's joint ecotourism organisation, KOMPAKH (p245), is based out of Putussibau, and offers a wide variety of services. It can organise visits to longhouses or Danau Sentarum and Betung Kerihun National Parks; its scope ranges from short treks to expeditions all the way across Borneo by boat and foot, with the assurance that you won't be beheaded like George Muller, the first European to try it.

The Kura Kura Resort south of Singkawang (p246) can arrange treks among beautiful beach and forest settings and provide cold beers for when you are done.

Elsewhere, Gunung Palung National Park (p249) is a priceless biodiversity reserve and holds perhaps 10% of the world's remaining wild orangutans. The huge variety of creatures brings international researchers and, unfortunately, poachers. Sights include views of nearby Gunung Palung (1116m) and Gunung Panti (1050m), crystal-clear waterfalls and swimming holes, and distinctive Balinese temples.

In South Kalimantan, the remote Pegunungan Meratus (p266) region features limestone mountains, tropical jungles and rivers that make the strenuous trails worth while. There are trails complimented by exciting bamboo suspension bridges along rivers and waterfalls, caverns, and another path that leads to the sea via Gunung Besar (1892m), the region's highest mountain.

Finally, East Kalimantan has a few gems in addition to the Apokayan Highlands (see p56). The Samboja Lodge (p271), run by the Borneo Orangutan Survival Foundation, organises treks into orangutan release areas where, at a careful distance, visitors can spot orangutans in their natural habitat. Kutai National Park (p275) is also home to a large number of primates and huge insects. Treks or boat tours can be organised at the visitor centre.

CAVING

Sarawak's Gunung Mulu National Park (p205) is a place of spelunking superlatives. It's got the world's largest cave passage (Deer Cave, 2km in length and 174m in height), the world's largest cave chamber (the Sarawak Chamber, 2km in length and 174m in height), and Asia's longest cave (Clearwater Cave, 107km in length). And the best part is that several of the park's caves are accessible to nonspelunkers: you can walk through them on well-maintained walkways.

Of course, if you're a real adventure-sport junkie, a gentle journey into one of the so-called 'Show Caves' of Mulu will likely whet your appetite for something more substantial. If so, you'll find that Mulu is a great place to give adventure caving a try. The park offers guided adventure cave-tours ranging from 45 minutes to 10-plus hours, and you can visit the gaping maw of the aforementioned Sarawak Chamber.

Also in Sarawak, Niah Caves National Park (p197) has some brilliant caves that should rank high on any Borneo itinerary. Indeed, were it not for the gaping wonders of Mulu so close by, we reckon that Niah would be world famous. The main chambers here are accessible by a wonderful plank-walk through intact swampy rainforest (a great way to see the jungle without suffering from leech bites). Once inside, you'll find an underground fantasy world that will almost certainly rank high on your Borneo highlights list.

DIVING & SNORKELLING

Sabah's Pulau Sipadan (Sipidan Island; p150), located in Tun Sakaran Marine Park off Semporna in east Sabah, is widely considered one of the world's greatest dive-sites. Few travellers are aware that the same marine park is also home to two more brilliant dive-sites: Pulau Mabul and Pulau Kapali (p150). While Sipadan is famous for coral walls, large pelagic spe-

Life in the Forests of the Far East, by Spencer St John, is a fascinating account of early attempts on Mt Kinabalu and exploration of the interior.

Butterflies of Borneo and Southeast Asia by Kazuhisa Otsuka is an essential guide for butterfly lovers.

LEECHES SUCK...BLOOD

There's just no getting around it: if you want to experience Borneo's magnificent tropical rainforests, you're going to encounter leeches. If it's been dry or you happen to visit a relatively leech-free area, you may come to the conclusion that all this talk of leeches is just a way to scare off the greenhorns. But, it's likely that, at some point, you're going to encounter leeches, perhaps lots of them.

There are two types of leech in Borneo: the common ground-dwelling brown leech and the striped yellow-reddish tiger leech, which often dwells higher up on foliage (meaning that you might discover them on your upper legs, torso, arms or even on your head and neck). You cannot feel the bite of the brown leech; you'll only realise you've been bitten when you actually see the leech on you or when you notice blood seeping through your clothing from the leech or the bleeding bite. You can actually feel the bite of a tiger leech, but it's usually so faint that you ignore it until you later discover the leech feeding on you.

Make no mistake: leeches are horrible, vulgar creatures. But they are almost completely harmless. They do not generally carry parasites, bacteria or viruses that can infect human beings. If a leech has managed to get a good bite of you, the bite may itch and bleed rather profusely for a few hours due to the anticoagulant that the leech injects. The bite may itch slightly for a few days and then it will scab over and resolve into a small dark spot that completely disappears after several weeks. The only danger is that the bite may get infected in damp tropical conditions, for which reason it is important to clean the bite and keep it dry.

Like hangover cures, everyone has a tried and true method of keeping the leeches off. Problem is, most don't work. Putting tobacco in your socks or on your shoes is a favourite method. We tried this one – literally soaking our shoes in tobacco juice – and it only seemed to encourage the little bastards. Many Kelabit people swear that spraying your shoes with a powerful insecticide works (that's insecticide, not insect repellent). We didn't try this one for fear of 'complications'. There is only one really effective method of keeping leeches off: buy yourself a pair of leech socks before coming to Borneo. These are socks made from tightly-knit fabric that reach to your knees. The best ones are light coloured so that you can see the leeches ascending your legs and pick them off. You can find these online from speciality shops.

If you do discover a leech on yourself, the first thing to remember is: don't panic! If you slide your fingernail along your skin at the point where the leech is biting, this will break the suction, at which point you can flick it off. Pulling it off can leave part of the leech's jaws in the wound, while burning it off can cause it to regurgitate its stomach contents into the wound – a horrible prospect indeed!

With a decent pair of leech socks and occasional checks of your legs and torso, you can walk for a full day in leech-infested forest with only a few odd bites. If you find these annoying, console yourself with thoughts of what others have encountered in the Borneo forest:

'We woke periodically throughout the night to peel off leeches. In the light of the head torch, the ground was a sea of leeches – black, slithering, standing up on one end to sniff the air and heading inexorably our way to feed. Our exposed faces were the main problem, with leeches feeding off our cheeks and becoming entangled in our hair. I developed a fear of finding one feeding in my ear, and that it would become too large to slither out, causing permanent damage.'

From Richard Mayfield's Kinabalu Escape: The Soldiers' Story.

If that doesn't put your suffering into perspective, then you can console yourself with the thought that you're playing an active role in the Borneo ecosystem!

cies and deep wall dives, Mabul and Kapali are muck dives, where the emphasis is more on small colourful creatures.

A full 300km out into the South China Sea, northwest of Kota Kinabalu, you'll find another world-class dive-site: the brilliant coral ring of Layang Layang (p130). This remote dive-site is basically a runway, a reef and a

purpose-built dive-resort. If you like wall dives, pristine coral and want a real adventure, this place is a must!

Also in Sabah, Pulau Labuan (p121) has a few notable wrecks in the waters surrounding the island.

Pulau Derawan and Sangalaki Archipelago in East Kalimantan (p284) have world-renown underwater worlds that should not be missed by serious divers. Marine life abounds and once you peel off the flippers, the island of Derawan has a small, friendly population that easily makes you feel at home in their laid-back pace of life.

Pasir Panjang and Tanjung Gundul (p246), hidden away by the forests south of Singkawang, have great beaches, opportunities to see (but not disturb) turtles, and snorkelling trips to Pulau Randayan.

Finally, if snorkelling is more your thing, you'll really enjoy the snorkelling off of the five islands of Sabah's Tunku Abdul Rahman National Park (p102), just offshore from Kota Kinabalu. A little further north, the pristine white beaches, awesome visibility and intact coral gardens of Pulau Mantanani (p129) make the island a snorkeller's paradise.

The Sarawak Chamber, in Sarawak's Gunung Mulu National Park, is the world's largest cave chamber.

MOUNTAIN BIKING

There is scope for adventurous mountain-biking in various parts of Borneo, including the Kelabit Highlands (p212) and on the trails around Mt Kinabalu (p106). One operator that can arrange mountain bike tours is Field Skills (www.fieldskills.com), a Sabah-based company that also arranges treks and jungle training.

RIVER RAFTING & KAYAKING

The rivers of Borneo offer scope for exciting river-trips, whether by kayak or raft. Keep in mind that water levels vary significantly throughout the year. Setting out to descend an unknown river in an isolated part of Borneo is a serious and dangerous undertaking indeed. Make sure you know what you are getting into and, ideally, bring a local along with experience on the river in question. More than a few would-be first-descenders have come to grief on the rivers of Borneo.

Rafting is popular through the Padas Gorge south of Beaufort, in southwest coastal Sabah, and is at its best between April and July, when water levels on Sungai Padas create Grade 2 to 4 conditions. The calmer **Sungai Kiulu** nearby is also commonly used for first-time rafters. For more details, see p117().

While not exactly kayaking, in **Tanjung Puting National Park** (p253) visitors can rent wooden canoes to explore the park's rivers and try to see the rehabilitated orangutans.

Near the headwaters of Sungai Kapuas in **Betung Kerihun National Park** (p245) is a great place for water adventure. KOMPAKH offers, in addition to its treks (see p243), kayaking, canoeing and white-water rafting.

The 'Coral Triangle', in which Borneo is located, holds 600 species of coral and more than 3000 species of fish.

NATIONAL PARKS

Borneo's national parks hold some of the world's most spectacular sights and rarest wildlife. Remarkable pinnacles, jagged mountain ranges, mangrove forests, waterfalls and pristine beaches grace the island's precious protected areas. No visitor to Borneo will want to leave without a glimpse of the parks' increasingly endangered and often elusive wildlife: turtles, elephants, the bulbous-nosed proboscis monkey and, of course, the great orange man, orangutan. Look out for, but don't stop to smell the massive rafflesia flower, with the unfortunate scent of rotten flesh.

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Sabah

Mountainous rainforests replete with endangered primates and birdlife complement tropical islands in the Malaysian region of Sabah. Many visitors make the trek up Borneo's highest peak, Mt Kinabalu, for the stunning views, while others seek out orangutans and proboscis monkeys. There's even fantastic diving to be had in marine national parks.



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1 Kinabalu National Park

Mt Kinabalu (p106; 4095m), home to a stupendous range of plants and animals, is Borneo's premier natural destination. Most come to climb the magnificent peak capped by soaring granite spikes. Soak at Poring Hot Springs after your ascent.

2 Danum Valley Conservation Area

Get right into diverse primary tropical rainforest at Danum (p145; 438 sq km), home to rhinoceros and orangutans. Sightings of gibbons, red-leaf monkeys, wild boar, Asian elephants and deer are common. Comfortable lodging and 50km of trails.

3 Maliau Basin Conservation Area

Scarcely visited, the spectacular and diverse Maliau Basin (p154; 588 sq km) comprises primary rainforest, towering cliffs and tiered waterfalls. Plant species number 1800, bird 230, and rhinoceros, elephants, leopards, orangutans and gibbons have all been spotted. A mere 25% is mapped.

4 Tunku Abdul Rahman National Park

The five islands of Tunku Abdul Rahman National Park (p102) have some of the most beautiful beaches in Borneo. Highlights include the clear water and a collection of coral enlivened with tropical fish.

5 Pulau Tiga National Park

A setting for the reality TV show *Survivor*, the three islands of Pulau Tiga (p119) have become popular tourist attractions, with their beaches, bush walks and bubbling mud (caused by volcanic activity).

6 Turtle Islands National Park

Endangered green and hawksbill turtles lay eggs year-round on the three islands of Turtle Island National Park (p141). It's part of a successful conservation effort, though some nights tourists outnumber turtles.

7 Tun Sakaran Marine Park

Sabah's largest marine park, also known as Semporna Islands Marine Park (p150), covers 325 sq km of tropical waters, including dive sites widely classed among the top 10 in the world. Pulau Sipadan, an oceanic island atop a volcanic atoll, is a dream come true for any diver – the sides of this island abruptly drop down over 600ft into the sea.

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Sarawak

Cave systems with ancient rock art, mangrove swamps and breeding grounds for Borneo's endangered turtles are among the unique offerings in Sarawak. Accessible walking trails cut through many of the area's parks, while others can be visited by boat. Other highlights include inviting beaches and diving opportunities.



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1 Bako National Park

Easily accessed from Kuching, Bako (p172; 27 sq km) showcases brilliant mangrove swamps, *kerangas* (distinctive vegetation zone of Borneo, usually found on sandstone, containing pitcher plants and other unusual flora) forest, rocky cliffs and secret beach coves. Tame proboscis monkeys, bearded pigs and silvered-leaf monkeys can be seen along the park's 17 well-maintained trails.

2 Niah Caves National Park

Niah (p197; 31 sq km) has an incredible limestone cave complex containing prehistoric cave paintings, 40,000-year-old human remains and ancient canoe-shaped coffins. Excellent walkways access all major points of interest.

3 Gunung Mulu National Park

Packed with scenic marvels, Gunung Mulu (p205; 544 sq km) has 45m limestone peaks, mountains, rainforest, a vast underground cave system and evening flights of several million bats. Expect canopy walks, adventure caving boat trips and hikes.

4 Kubah National Park

Kubah National Park (p178; 22 sq km) is a natural retreat located a mere 15km from downtown Kuching. Shaded trails cut through the forested sandstone hills and offer lookouts, waterfalls and a wide variety of palms and orchids.

5 Gunung Gading National Park

The massive *rafflesia tuanmudae* flower, blessed with the aroma of rotting flesh, can be sought out year-round at Gunung Gading National Park (p182) from a wooden boardwalk. Steeper day treks are also on offer.

6 Tanjung Datu National Park

Endangered turtles lay their eggs on a fenced-off beach area in this 14-sq-km park (p183). Rainforest and rivers comprise the inland section, and snorkelling and scuba diving are allowed in selected ocean areas between April and September.

7 Talang-Satang National Park

Talang-Satang National Park (p183) consists of two pairs of islands and protects turtle egg-laying grounds. If you're lucky you might witness baby turtles being released into the wild. Guided diving is permitted in some areas.

8 Similajau National Park

A coastal park with attractive white beaches, Similajau National Park (p196) has good walking trails, 230 bird species, including hornbills, and is home to gibbons and macaques. It's perfect for relaxing as you pick your way through Borneo...just take care to avoid the saltwater crocodiles.

9 Lambir Hills National Park

Lambir Hills National Park (p199; 69 sq km) has waterfalls and a natural swimming pool. Walking trails wind through its rainforest, where a good range of wildlife, including gibbons, pangolins and barking deer, reside.

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Kalimantan

Despite reports of widespread illegal logging and agriculture, Kalimantan's national parks are still a refuge for spectacular flora and fauna. Facilities and accessibility vary wildly. Many park staff moonlight as guides, but office staff may know little about field conditions.



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1 Tanjung Puting National Park

Spot orangutans at Tanjung Puting (p253; 3000 sq km), a rehabilitation centre with daily feedings of the hairy primate. Take a houseboat trip through swampy forests which hide proboscis monkeys, sun bears and 200-plus bird species.

2 Gunung Palung National Park

Seaside Gunung Palung (p249; 90 sq km) has a diversity of habitats and flora that rivals any in Borneo, with three dozen species of mammals, nearly 200 bird species, and wild orangutans. Access is more difficult here than at other parks.

3 Betung Kerihun National Park

With hundreds of rivers and 180 peaks in the Kalimantan section alone, the truly adventurous can trek, cave and raft this 8000-sq-km park (p245). Wildlife thrives here, including orangutans and other primates, and 300-plus species of birds.

4 Bukit Baka-Bukit Raya National Park

The forested mountains of this park (p243; 1810 sq km) create a terrain studded with waterfalls and meandering rivers where the giant rafflesia blooms every March. Tourist facilities are scarce.

5 Danau Sentarum National Park

This wetland rainforest area (p244; 1320 sq km) alternates seasonally between deep lakes and isolated pools. Trophy aquarium fish, crocodiles, storks, orangutans and proboscis monkeys inhabit the waterways and forests. There are Dayak longhouses here and, for visitors, basic accommodation.

6 Sebangau National Park

This peat swamp forest area (p259; 5687 sq km) is home to a large population of orangutans, which guides will help you find. More than 100 bird species and 35 mammal species inhabit the varied forest.

7 Kutai National Park

Track wild orangutans by motorised canoe at Kutai National Park (p275; 1980 sq km), where coastal mangroves and ironwood forests house a half-dozen primate species, sun bear, deer, abundant bird life and huge tiger-striped beetles. Accommodation is basic.



8 Sebuku Sembakung National Park

The plains of Sebuku Sembakung (p286; 4000 sq km) are the preferred haunt of Kalimantan's only elephant population. Other areas are characterised by swampland and green hills with limestone outcrops. Arrange visits ahead as no tourist facilities exist.

9 Kayan Mentarang National Park

Southeast Asia's largest forest, Kayan Mentarang (p286; 13,600 sq km) features Apokayan Highlands and expanding ecotourism. Diversity abounds and new species are often discovered within the national park. Dayak longhouses can be visited on guided tours.

10 Pegunungan Meratus

This South Kalimantan range (p267; 2500 sq km), spreading from Loksado to the Makassar Strait, features forest treks through the hills and valleys of limestone mountainsides to farming villages.

Brunei

Despite being one of the smallest countries in the world, Brunei is home to the 500 sq km Ulu Temburong National Park, a swath of virgin rainforest wedged like a dagger in the heart of Sarawak's Limbang Division. Getting there involves navigating a maze of mangrove-lined waterways – an adventure unto itself.



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1 Ulu Temburong National Park

Although 75% of Brunei's forests remain intact, the country has only recently begun to develop parks and tap into its ecotourism potential. Ulu Temburong (p234; 500 sq km) protects a lowland dipterocarp forest with giant trees and has a canopy tower and walkway suspended 50m above the forest floor.

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