



Diving in Cozumel

This guide describes a number of popular spots and some less frequently dived but well worth seeing. Several shore dives are listed, and you will find a few fine days can be spent diving from the shore for the cost of a taxi ride or two. Some reefs can be dived either from boat or shore, depending on how energetic (or lazy) you feel. Other reefs are best dived by boat.

The branch of the Gulf Stream that sweeps along the north/south-oriented island produces currents ranging from barely perceptible to high-velocity flows that move much faster than any diver can swim. The farther offshore you go, the stronger the current (usually), but there is no way to predict current velocity accurately in any one spot. The finest diving is on the crest of a near-vertical wall on the western shore of the island. Since this shore faces the mainland across a narrow channel, and away from the prevailing easterly winds, the weather here is usually much better for diving than on the eastern shore.

Typical conditions on the western side of Cozumel are calm seas but strong currents. Things can be a bit rougher as you approach the southern end of the island and out of the protection of land.

While there are spots on the eastern shore of Cozumel that can be dived during certain conditions (eg strong west wind), these are not covered in this guide due to the difficulty of access and the typically marginal water states.

Most of the reefs mentioned in this book are very large, and this dive guide has been compiled to give an overview of what to expect. Consequently, each site described here has a range of depth possibilities, which is listed for a typical dive that includes viewing most of the features described, but definitely does not include the maximum possible depth! Currents may be much stronger

or weaker than anticipated. Shoreline entry and exit spots can also change with time.

Your best source of information about any location will probably be local divers, especially those working for charter dive operators or shops, since they are familiar with the conditions and topography at each site.



Sponges of many colors grow under the ledge on the down current side of this coral head

Most Cozumel dive boats are modern, fast vessels, increasing comfort and safety for divers



TYPICAL DIVE OPERATIONS

Dive operators on Cozumel vary considerably with respect to their punctuality, the reliability of their boats and – most importantly – their concern for your safety. Some operators employ well-trained guides who are certified divemasters or diving instructors, while others may only hire local divers familiar with reef locations. Some boats carry first-aid kits, some carry oxygen, some have radios, and others don't. Some use new tanks, while others use tanks that may not have been inspected or hydrostatically tested when they should have been. Rental gear ranges from 'donate-it-to-a-museum' vintage to near-new, depending on the operator.

The diving industry on Cozumel represents a vital economic resource to the island. Your business is anxiously sought by dive operators for this trip and for the next. You do have the right – and, perhaps, the responsibility – to demand first-class service from dive operators in exchange for your money. In the spirit of

better, safer diving, we urge you to ask questions about those matters you consider important to you as a diver, and to give your business to only those operators that meet proper safety standards. You can have a positive influence on the future of diving on Cozumel and at the same time increase your safety and enjoyment.

DIVE BOATS

There are many dive boat operators on the island. Two types of boats are commonly used: open 'flat-tops,' with broad decks offer easy suiting up and entries and exits; and modern, high-powered runabouts and small cabin cruisers that are fast and stable even in rough seas. You may enjoy the roominess of the flat-tops, or instead just want to get to and from the dive site as fast as possible. You can make the choice if you ask the operators what kind of boats they run before booking trips.

Rather than book all your diving with one operator, consider sampling several

shops to see how they compare to one another. There are lots of differences.

Most operators offer two-tank morning or afternoon trips, providing tanks and weights. A few operators still offer lunch between dives, but the old custom of stopping on San Francisco Beach, a beautiful white sand strip heavily patronized by local Mexican families, is dying out in favor of 'efficiency' (bag lunches or just soft drinks on board).



Hotel piers make excellent entrance and exit points for shore dives. Be sure to plan your dive carefully so you know exactly where the exit will be. Always be watchful for boats when on or near the surface

SHORE DIVING

If you are diving from the shore, and not planning to stay immediately in front of one of the resorts with a dive shop and 'its own dive sites' (they can be a bit territorial about this so try to be sensitive), take a surface float with a dive flag to prevent unpleasant encounters of the worst kind. The authorities frown on drift diving other than with boat operators, in particular, and if you dive from shore without a flag – especially near drop-offs that boats operate frequently – you may be arrested and/or have your gear confiscated. Take this recommendation seriously.

You will find it extremely easy to rent tanks and weights for shore diving at the many dive shops in town, or from hotels. Most shops rent aluminum cylinders that hold 80 cubic feet of air at 3000 psi (about 2265 liters at 207 bar in metric units). Hot, short fills unfortunately do occur sometimes. It's always worth gauging your rental tank before carrying it away from the shop. If you want to go diving after 5pm, plan ahead – most shops close about then.

For shore dives, an exit spot some distance down-current must be selected (and inspected) in advance, since it may be impossible to return to the starting point up-current. The usual current direction is parallel to shore from south to north, with speed increasing as you get farther offshore, but the current sometimes reverses direction and can occasionally take a seaward course, pushing divers away from the beach! Before your dive, arrange with someone on shore to meet you at your exit point at a given time. That way, if you have any problems en route, help can be summoned promptly.

Be sure not to swim any farther than your capabilities allow for a safe, easy return, and ask the local divers to assist evaluating water conditions before jumping in. Booties, wetsuits and

gloves are absolutely necessary to deal with ironshore, the sharp, volcanic-looking limestone that can abrade your flesh faster than you can say, 'Yow, I'm shredded!'

Many beach hotels serve as excellent starting and end spots for shore dives. They often feature ideal entrances and exits, such as concrete steps and ladders, and are generally placed in areas sheltered from strong currents. At the end of your dive, hotels also have cool drinks, and showers to get the salt and sand off you and your gear.

These large knobby polyps are typical of cavernous star coral. The species comes in a variety of colors and is a principal reef builder



Shore Diving

Due to the strong current, shore diving on Cozumel (unlike many other dive destinations) should only be done by advanced divers with experience in high-current situations. The exceptions are The Junkyard and the area between El Cid La Ceiba Hotel and the Villa Blanca Hotel, Dzul-Ha, Colombia Shallows, and Parque Chankanaab, which are good for shore diving and also have good snorkeling. If you're shore diving, you won't have anyone picking you up in a boat at the end of your dive when you may be tired. It's much easier than you would expect to get caught in the current and carried rapidly very far from where you started, or far from where you want to be when it's time to get out.

USEFUL DIVE TECHNIQUES

As in any open-water situation, every diver should carry an audible signal device such as a whistle or Dive Alert horn, along with devices capable of being seen from far away in the day or night, such as a flashing strobe, mirror or dive light, and an inflatable signal tube ('safety sausage').

Drift diving is the norm for boat diving in most locations. For boat dives, a 'live boat' technique is generally used by charter boat captains, who follow divers' bubbles to greet them at the end of the dive. A dive guide is usually provided at both ends of a group in order to keep divers together while on the reef and to aid pick-up at the surface. Divers who rush ahead without seeing the reef, or those who lag behind (usually photographers) make it exceptionally difficult for the dive guide to keep the group together. Be sure to describe your previous experience, swimming abilities, and any special concerns to the divemaster or dive guides on the boat. Given the

The hard bottom in front of Dzul-Ha beach is dotted with scattered lettuce corals and gorgonians



Many species of fish take refuge under ledges on the down-current sides of coral heads



strong currents around Cozumel, we do not recommend you rent a boat on your own without a local dive guide and captain. In fact, this isn't even legal in the National Park. There are special skills required to operate a 'live' boat safely around divers, and Cozumel's waters favor using professional operators only.

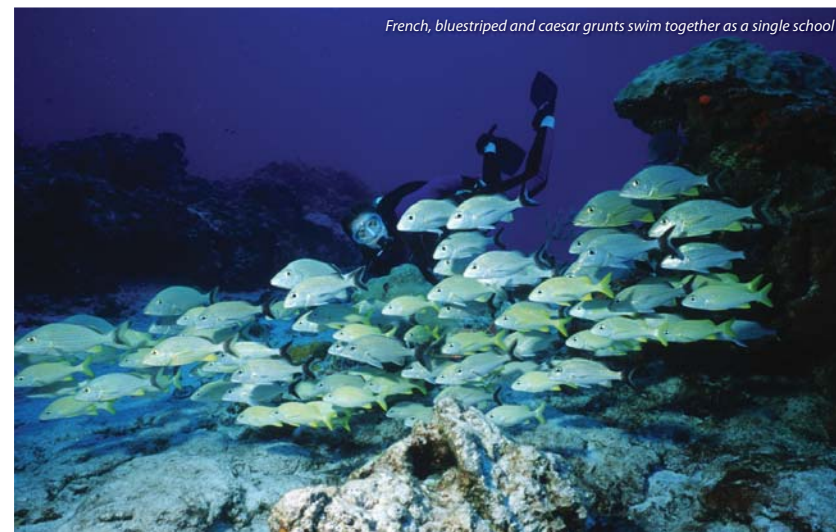
Be particularly careful about boat traffic when approaching the surface from below or making a safety stop near the surface. Look all around and listen for boat engines and propellers, and stay with your group. Keep in mind not all boats make noise, and boats can be hard (or impossible) to hear sometimes. Power boats can drift with engines off and sailboats don't usually have auxiliary engines running, so use your eyes as well as your ears.

Avoiding boats isn't just general theoretical advice. Novices as well as experienced divers do get 'propped' from time to time.

Cozumel may be enjoyed by divers with a wide range of skill levels. However, charter dive operators do not always separate experts from novices on boat dives. For wall dives in particular,

the degree of experience your guide has can directly affect your safety and comfort. For a beginner, to be dropped over a vertical wall in a strong current may be an exciting – and dangerous – situation. Surprises are possible even for the pro. For example, when high-velocity water runs into a coral buttress, zones of rapid upwelling and downwelling develop. Being caught in one of the down-slope currents is like being flushed in a gigantic toilet, and divers must be aware of their depths and surroundings at all times.

A little specialized practice on buoyancy control, drift-diving techniques, and deep-diving methods with a qualified instructor can go a very long way toward ensuring a pleasant, safe trip. This instruction should be arranged with the dive shop or charter operator before getting on the boat, however, as dive guides may have their hands full and be unable to offer any instruction without prior appointments. Furthermore, the majority of dive guides on the island are just that – guides – and not diving instructors. Set up any instruction you may need in advance. Don't overesti-



French, bluestriped and caesar grunts swim together as a single school

mate your abilities if you haven't done high-current diving before. Cozumel has humbled plenty of other divers, so don't be too proud to ask for advice or help.

DIVE LEVEL ADVICE

The following general recommendations apply when currents are minimal or nonexistent during a dive. More current requires more caution: inexperienced divers should never allow themselves to be in any situation where loss of buoyancy control could result in rapid depth increases. This translates as advice to be extremely careful on or near walls (near-vertical or vertical drop-offs) that do not have ledges or other physical relief that would allow you to stop an uncontrolled descent or ascent.

Gradual drop-offs present less hazard, and diving on or below the lip of these drop-offs (slopes less steep than 45 degrees) should be within the capabilities of novices under the direct supervision of a qualified instructor or divemaster. These recommendations should be taken in a conservative sense, keeping in mind the adage about there being 'old divers and bold divers but few old bold divers'. As a general rule, if you stay close to a good divemaster and communicate with him or her, it will greatly increase your safety.

Penetration of wrecks, diving in caverns or caves or other locations from which a direct vertical ascent to the surface is not possible (so-called 'restricted overhead' dives), or diving below a depth of 100ft (30m), are suitable only for advanced divers with specialized training in these skills and the necessary equipment. Diving below a depth of 130ft (40m) is outside the realm of sport diving.

Unlike some of Lonely Planet's other Diving and Snorkeling guidebooks, this one does not provide individual expertise ratings for individual sites. On any

given day, depending mainly on the current, a site can be fine for novices, or unsafe for advanced divers or even instructors.

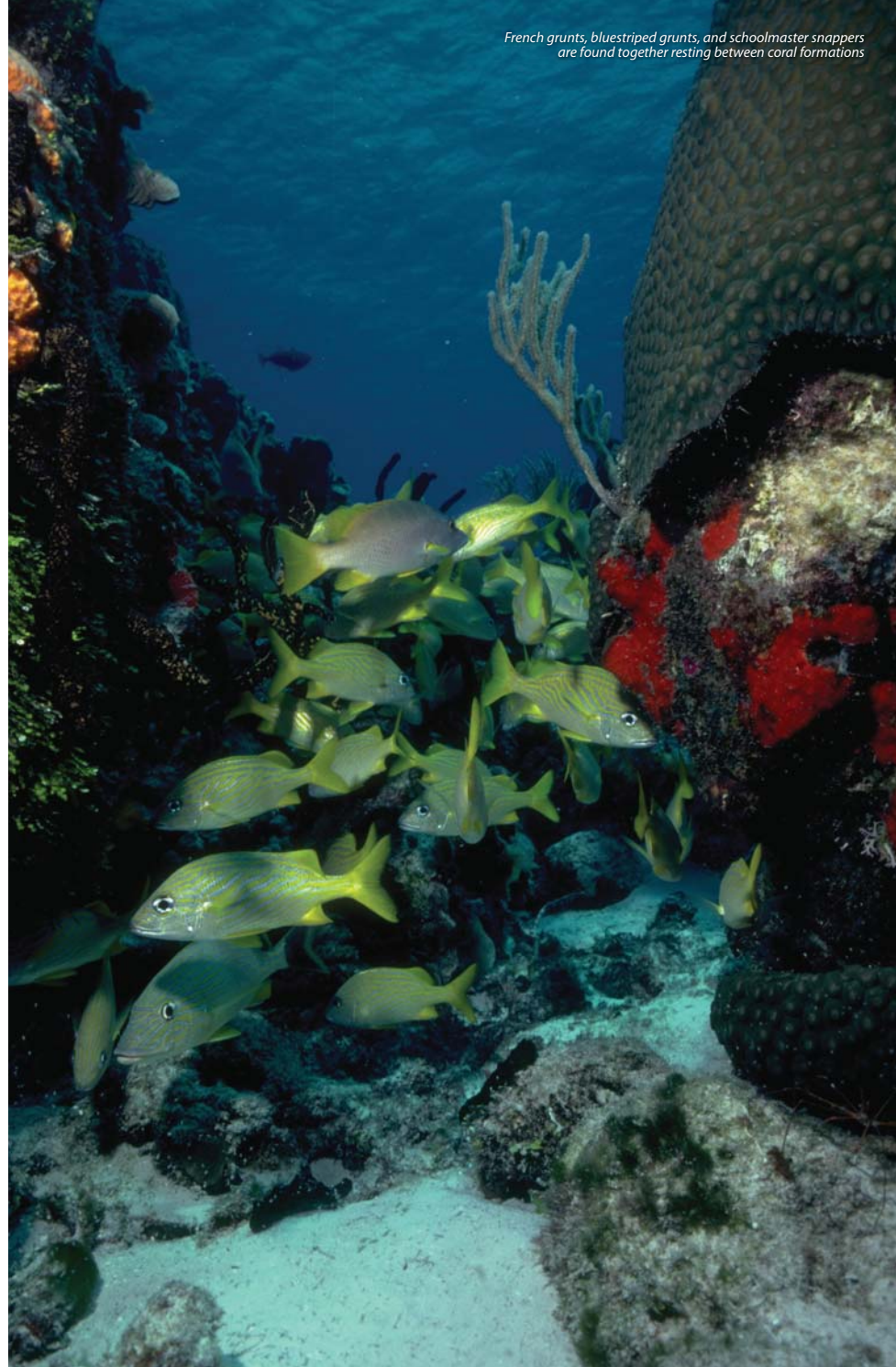
Furthermore, most of the dives listed in this book have extremely varied terrain with features for divers of different levels. Many of the reefs have sandflats inshore of crests and buttresses whose seaward side drops more-or-less steeply into very, very deep water.

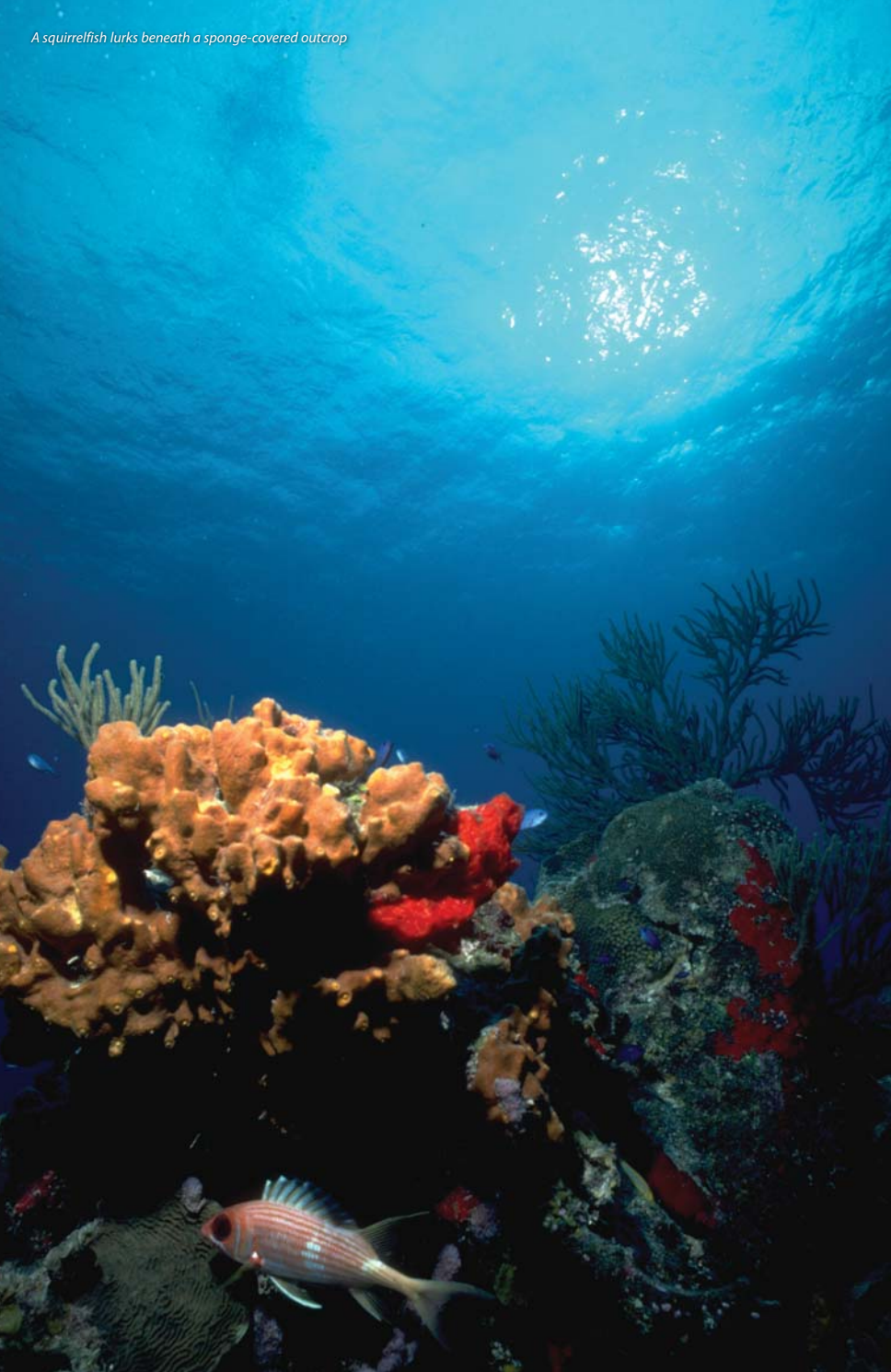
Dive operators frequently take divers of all levels to these reefs. Novices can hang out in the sand flats or drift along the tops of the buttresses, or drop a short distance down the seaward face of the reefs, while more experienced divers can go deeper on the walls.

If it sounds too good...

If you hang around on Cozumel for a while, you'll probably hear locals talk about some thrilling diving off the north end of the island. 'Scary' would be an accurate rating for most of these sites, which are not recommended and are not included in this guide. The Gulf Stream comes up from the Caribbean to the south, and the current wraps around both sides of the island before joining together – the way air moves on the trailing edge of an airplane wing. It produces an intense high-speed current. Typical bottom speeds are in the 5-knot range, so a drift dive there can cover several miles. While it is amazing diving, it has killed more than a few divers who blew away from their boats or went north along the shore and were never found again. The divers would have drifted into the Gulf of Mexico with the Gulf Stream – their likely next stop was either a pelagic white-tip or two, or Florida in a few days. They would never have had a chance to swim to safety because there's no land they could possibly reach.

French grunts, bluestriped grunts, and schoolmaster snappers are found together resting between coral formations





Rating System for Dives & Divers



Divers at a hotel pier prepare for a night dive as the sun is setting

The dive sites in this book are rated according to the following system. These are not absolute ratings but apply to divers at a particular time, diving at a particular place. For instance, someone unfamiliar with prevailing conditions might be considered a novice diver at one dive area, and an intermediate diver at another, more familiar location.

Novice*

A novice diver generally fits the following profile:

- basic scuba certification from an internationally recognized certifying agency
- dives infrequently (less than one trip a year)
- logged fewer than 25 total dives
- little or no experience diving in similar waters and conditions
- dives no deeper than 60ft (18m)

*An instructor or divemaster should accompany a novice diver on all dives.

Intermediate

An intermediate diver generally fits the following profile:

- may have participated in some form of continuing diver education
- logged between 25 and 100 dives
- no deeper than 130ft (40m)
- has been diving in similar waters and conditions within the last six months

Advanced

An advanced diver generally fits the following profile:

- advanced certification
- has been diving for more than two years; logged over 100 dives
- has been diving in similar waters and conditions within the last six months

Pre-Dive Safety Guidelines

Regardless of skill level, you should be in good physical condition and know your limitations. If you are uncertain as to which category you fit, ask the advice of a local dive instructor. He or she is best qualified to assess your abilities based on the prevailing dive conditions at any given site.

Ultimately you must decide if you are capable of making a particular dive, taking into account your level of training, recent experience, and physical condition, as well as water conditions at the site.

Remember that water conditions can change at any time, even during a dive.

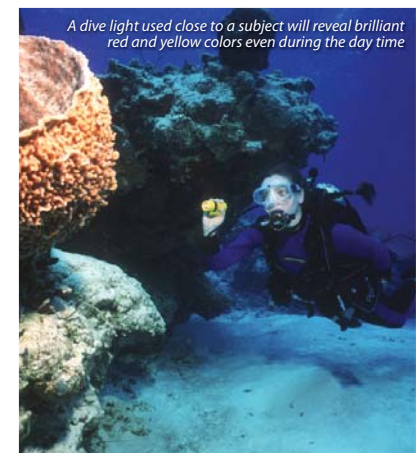


Diving Conservation & Awareness

GENERAL TIPS

Dive sites tend to be located where the reefs and walls display the most beautiful corals and sponges. It only takes a moment – an inadvertently placed hand or knee on the coral or an unaware brush or kick with a fin – to damage this fragile and delicate living ecosystem. Please consider the following tips when diving, and help preserve the ecology and beauty of the reefs:

- 1 Maintain proper buoyancy control and avoid over-weighting. Be aware buoyancy can change over the period of an extended trip: initially you may breathe harder and need more weight; a few days later you may breathe more easily and need less weight.
- 2 Position your weights to help you stay horizontal; if you use a weight belt, raise the belt above your waist to elevate your feet/fins, and move it lower toward your hips to lower them.
- 3 Use your tank position in the backpack as a balance weight (ie raise your backpack on the tank to lower your legs, and lower the backpack on the tank to raise your legs).
- 4 Be careful about buoyancy loss at depth; the deeper you go the more your wetsuit compresses, and the more buoyancy you lose.
- 5 Photographers must be extra-careful. Cameras and equipment affect buoyancy. Changing f-stops, framing a subject, and maintaining position for a photo often conspire to prohibit the ideal 'no-touch' approach on a reef. So, when you must use 'holdfasts,' make sure you choose them intelligently (ie use one finger only for leverage off an area of dead coral).
- 6 Avoid full leg kicks when working close to the bottom or leaving a photo scene. If you inadvertently kick something, stop kicking!
- 7 When swimming in strong currents, be extra careful about leg kicks and handholds.
- 8 Secure gauges, computer consoles, and octopus regulators to keep them from dangling. They are like miniature wrecking balls to a reef.
- 9 Never drop boat anchors onto a coral reef, and take care not to ground boats on coral. Encourage dive operators and regulatory bodies to establish permanent moorings at popular dive sites.
- 10 Resist the temptation to collect or buy corals or shells. Aside from the ecological damage caused by those who take them from the sea, taking home marine souvenirs reduces the beauty of a site and spoils the enjoyment of others.
- 11 Resist the temptation to feed fish. You may disturb their normal eating habits, encourage aggressive behavior, or feed them food that is detrimental to their health.



These large margates might make some divers think of spearfishing. Cozumel reefs are in a national preserve and the Mexican government considers illegal collecting and spearfishing a serious offense.



MARINE CONSERVATION ORGANIZATIONS

These groups are actively involved in promoting responsible diving practices, publicising environmental marine threats, and lobbying for better policies.

CORAL: The Coral Reef Alliance

☎ 510-848-0110
www.coral.org/

Coral Forest

☎ 415-788-REEF
www.blacktop.com/coralforest/

Cousteau Society

☎ 757-523-9335
www.cousteau.org

Ocean Futures

☎ 714-456-0790
www.oceanfutures.org

Project AWARE Foundation

☎ 714-540-0251
www.projectaware.org

ReefKeeper International

☎ 305-358-4600
www.reefkeeper.org

SPEARFISHING, COLLECTING & SPORT FISHING

Virtually all of the island's diveable reefs lie within the Parque Marino Nacional Arrecifes de Cozumel (National Marine Reef Park of Cozumel), a Mexican national preserve. The park extends from Paraíso Reef all the way around the southern end of Cozumel. Collection of any animals (including shells with living inhabitants) or plants within the preserve is strictly forbidden, as is damaging any part of the reefs. Consider diving here as a 'look, don't touch' experience.

Outside of the reserve, sport fishing is allowed if you have a Mexican fishing license. The Mexican sport fishing regulations are fairly complex, and include bag and seasonal restrictions on many species. Fishing licenses can be requested from the Oficina de Pesca (Fish Office) in San Miguel on Cozumel (ask a taxi driver where it is), or from the charter sport fishing boat captains who can obtain licenses for their clients.

If you want to do any spearfishing outside of the park, ask specifically about restrictions on taking game underwater. The Mexican government takes illegal collecting very seriously. A large fine, including confiscation of the gear used for the collection (eg all your diving equipment and boat), would not be out of the ordinary. Spear guns are usually seized by Customs authorities upon entry to Cozumel – just in case you might be tempted to stray – and returned to you (perhaps) when you leave, but don't count on it. More than likely, you'll be running for the plane, and they will be taking a break.

The funnel of this barrel sponge faces down current, which aids in drawing water through the outer wall and exhausting it out the funnel for feeding, respiration, and removal of wastes and sexual products



Dive boats follow the bubbles of drifting divers and stand ready to promptly assist them getting back into the boat. Signal the boat crew when you reach the surface and let the boat come to you



Health & Safety



A school of French grunts swims over a stand of finger coral

DIVING ACCIDENT MANAGEMENT

This section discusses emergency procedures for obtaining professional help in case of a diving accident. It does not discuss the diagnosis or treatment of medical problems.

We do suggest some ways to contact qualified medical personnel as rapidly as possible, based partly on responses to our own inquiries for this volume and partly on information supplied by other sources.

In case of a diving accident, such as a lung overpressure injury or decompression sickness (bends), prompt recompression treatment in a hyperbaric chamber, also called a recompression chamber, may be essential to prevent permanent injury or death. In case of another type of accident such as a fall, or an injury due to a marine animal interaction, your best bet will probably be the hospital.

HYPERBARIC CHAMBERS

There are currently three functional chambers on Cozumel Island, which makes the situation somewhat confusing: the hospital chamber, the Buceo Medico Mexicano (BMM) chamber, and the Cozumel Recompression Chamber. In an emergency, we encourage you to call DAN's hotline (see below) or ask your dive operator to call them – and ask DAN's advice. You don't have to be a DAN member to use the DAN hotline.

The oldest facility is at the hospital (Centro de Salud, ☎ 872-0140), a few blocks from the water on Calle 11 Sur, which intersects Avenida Rafael Melgar (the street along the waterfront) near the Hotel Barracuda, toward the southern side of town. The hospital chamber will recompress you if the other chamber is occupied, or if you prefer to go the low-budget route. Because the hospital is government-funded, the cost of a chamber treatment is subsidized

Emergency Contact Information

Emergency contact information can change unpredictably when personnel and facilities move, get new telephone numbers, and so on. Be sure to check on emergency contact information during or just prior to your dive trip. The information in this book was correct as of April 2006 but may be out of date by the time you read it. The phone system on Cozumel is also changing, and most local numbers now need to be preceded with 87 before dialing the rest of the number, which usually begins with a 2. We've done it that way in this section. Long-distance calls to the USA need to be preceded by the country code, 001.



A reddish coney hides in a barrel sponge

and may be relatively low compared to treatments at either of the other two privately owned chambers. However, the hospital chamber is used mainly for non-diving-related hyperbaric oxygen treatments and for injured Mexican nationals, rather than for tourists. If you look as if you can afford it, you will probably find yourself shunted to another chamber.

The BMM chamber (☎ 872-1430) is a member of the international Subaquatic Safety Services (SSS) Recompression Facilities Network that operates several chambers in other locations and is geared specifically for diving tourists. It is located on Calle 5 Sur, around the corner from Aqua Safari and about one block from the water.

The Cozumel Recompression Chamber (☎ 872-3070) is also aimed at diving tourists, and has a full-service clinic with many medical specialties offered other than diving medicine. It is located at the Clinica San Miguel on Calle 6 Norte, between Avenida 5 and Av 10, a few blocks from the water.

If you need an ambulance to get to a chamber or to the Centro de Salud (hos-

pital), you can call the ambulance service directly (☎ 872-0639) or the Red Cross (☎ 872-1058). Any of the chambers can also set up ambulance transportation and simultaneously prepare for your arrival at the chamber, and can assist you in locating other physicians for non-diving problems.

It should be emphasized that the chamber situation may be completely different by the time you arrive on Cozumel. Emergency numbers change, and chambers wax and wane depending upon their funding and staff. We strongly recommend you ask your booking agent to provide you with reliable emergency information at the time you make reservations. Furthermore, we suggest that you check this information with DAN (see below), given the state of flux in Mexico. Upon arrival, we also sug-



A large lobster surprised in the open and a diver eye each other

gest you ask your dive operator how to cope with a diving emergency or other accident. Don't accept a vague answer. You should interpret the absence of a workable accident management plan as a lack of both professionalism and concern for your welfare.

If this all sounds a little paranoid, be warned, it isn't. Some of those old horror stories about botched evacuations and bungled recompression treatments in Cozumel are true. It's a long way back to the USA if you have a medical problem. The trip may involve extensive bureaucratic juggling, massive expense, and delays. This is not the place to take a lot of chances. When you're diving, keep an eye on your instruments, make slow ascents and safety stops, watch out for boats, and here – more than many other places – don't push your luck.

Emergency Contacts

Centro de Salud hospital and recompression chamber: ☎ 872-0140

BMM Recompression Chamber:

☎ 872-1430

Cozumel Recompression Chamber:

☎ 872-3070

Divers Alert Network (DAN):

☎ 001-919-684-8111 or

☎ 001-919-684-4326

Divers Alert Network Travel Assist:

☎ 001-919-684-3483

NAUI Travel Assistance

(CSA Insurance Services):

☎ 001-410-453-6330

PADI Assist America:

☎ 001-609-986-1234

DIVE ASSURE (AIGAssist):

☎ 001-713-260-5507

Cozumel is home to many large black grouper



DAN

Divers Alert Network (DAN) is an international membership association of individuals and organizations sharing a common interest in diving and safety. It operates a 24-hour diving emergency hotline, (☎ 001-919-684-8111 or ☎ 001-919-684-4DAN (☎ 001-919-684-4326) accepts collect calls in a dive emergency). DAN does not directly provide medical care; however, it does provide advice on early treatment, evacuation, and hyperbaric treatment of diving-related injuries. Divers should contact DAN for assistance as soon as a diving emergency is suspected. For membership questions, ☎ 800-446-2671 in the US or ☎ 001-919-684-2948 elsewhere.

AIR AMBULANCE SERVICE

If you elect to leave Cozumel for treatment for a diving injury, you are probably going to need a chartered flight with medical equipment and personnel on board, in an aircraft capable of pressurization at the equivalent of sea-level

Insurance Hints

If you have medical or accident insurance, we encourage you to check with your carrier before you go to Cozumel, and find out about their coverage for diving accidents that may require recompression therapy. Make sure you bring along their insurance card.

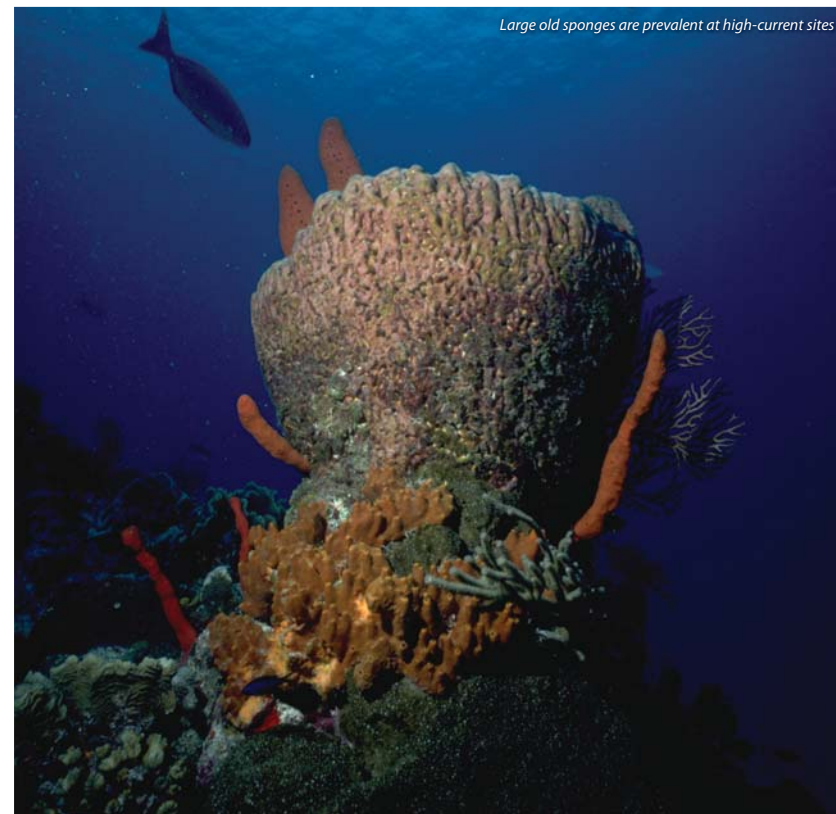
We also encourage you to obtain secondary insurance specifically for diving accidents, since many standard insurance plans have large deductibles, or don't cover some or all the costs of recompression therapy.

If you have secondary coverage, your own medical insurance is the primary carrier, ie on the hook until you either hit its limits or require some medical services not included in its policy. Secondary coverage is intended to pay only for 'leftover' or excluded expenses from your primary insurer. If you don't have primary coverage, chambers will usually (but not always) accept secondary insurance as if it were primary coverage.

Boat traffic is a serious hazard in Cozumel. Be especially alert for boat noise, look around during ascents when near the surface, and be proficient at buoyancy control during ascents and while performing safety stops. This model/scuba instructor nearly lost one of her legs to a boat propeller!



Yellowhead jawfish build burrows in the sandy bottom near reefs. You will have to look ahead to see them outside their burrows because they back into the burrow tail-first when approached



Large old sponges are prevalent at high-current sites

(1 atmosphere). Several air ambulance companies in the United States can provide this service, but flying in Mexico requires some red tape best taken care of in advance. Under ideal circumstances you will probably wait at least four hours after you request an aircraft before it lands in Cozumel.

You should be aware if insurance doesn't cover it, the cost of an evacuation flight will be high and payment will be expected either in Mexico or promptly after arrival in the US. You will most likely be asked to provide proof of financial responsibility in the form of cash, check, or credit cards, or to furnish names and phone numbers of friends or relatives in the States who will guarantee the cost

of the flight. Brace yourself for a bill that may exceed the price of a new luxury car by several times, depending on how fast an aircraft you need (this may be your one chance to ride in a private jet), what medical equipment and personnel need to be on board, its point of origin, and destination.

Alternatively, if you have dive travel insurance through one of the SCUBA instructional agencies or DAN, this ride may be free if you let them make all the necessary arrangements. Take the time to check around before you go to Cozumel. Trying to figure out how to get home in a hurry for free when you're in an emergency situation is almost certainly not going to work.

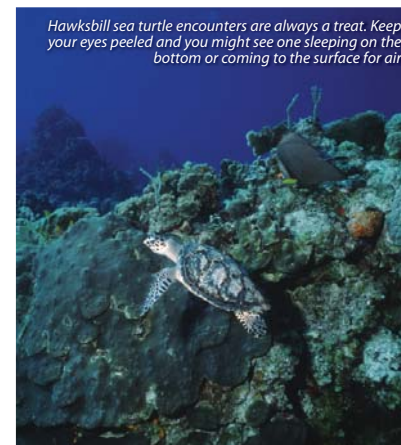
Marine Life

Cozumel has the usual suite of Caribbean reef fish, invertebrates and plants. Some species likely to be seen are described in this section. Observant divers will notice a definite zonation, where groups of species change with increasing depth, and with distance from shore. The zonation reflects decreasing levels of light and wave exposure with increasing depth, and current velocities offshore as the Gulf Stream rips along on its way to Florida, and then to the North Atlantic. The zonation is most obvious among such reef-forming invertebrates as corals and sponges, but many fish are closely associated with the reef-builders and so show zonation themselves.

CORALS

Very close to shore, perhaps the most prominent species is the elkhorn coral. It forms huge colonies that shelter long-spined sea urchins during the daytime. At night, the urchins move away from their shelters and graze on plants on the surrounding bottom. The largest gorgonians, or sea fans and sea whips, are also near shore. Divers are more likely to encounter fire coral in shallow water, growing on gorgonian skeletons, dead coral or other surfaces.

Farther from shore, most of the reefs are dominated by the mountainous star coral and the cavernous star coral. In shallow water, these tend to grow as large mounds. As you probably know, corals are animals but have internal plants (zooxanthellae) which produce the food and oxygen used by their hosts. The zooxanthellae need light to exist, and many species of corals that change their growth forms depend on where they live in order to capture as much light as possible for their zooxanthellae. As a result, in deeper water (where there is not as much light), species such as the



Hawksbill sea turtle encounters are always a treat. Keep your eyes peeled and you might see one sleeping on the bottom or coming to the surface for air

star corals tend to form sheets or plates that act like natural solar collectors. The large buttresses, such as those on Palancar Reef, are built mainly by star corals and the various growth forms can be seen at different depths. Species can always be recognized by the shape of the individual polyps, whatever the shape of the entire colony. The massive corals, such as the giant brain coral, are found over a wide depth range but are often larger in deeper water.

Other corals, such as sheet or plate corals, specialize in living in lower-light situations (in crevices, under overhangs or in deep water). These corals can become very large, thin and fragile in depths at which they are not likely to be broken by waves.

ANEMONES & SPONGES

The giant Caribbean anemone is frequently seen with fluorescent tentacle tips, which bear the stinging cells it uses to capture tiny crustaceans and other prey. Different colored tentacles do not indicate different species but rather color phases of the same species.

Giant anemones are common on the reefs surrounding Cozumel
Photo: G. Lewbel



There are sponges wherever coral is found in Cozumel, and large sponges can be seen on nearly every dive. Look for brittle stars in purple vase sponges. Bristle worms (also called fire worms) are common everywhere, but can be seen breeding on purple vase sponges at night during the late fall. Many sponges look brown by daylight but are orange or blood-red by night or in strobe-lit photographs. The basket sponges on the drop-offs have grown into funnel shapes under the influence of the usual south-to-north current. Their open cavities face north so that more stagnant water (carrying wastes from the sponge) is extracted from the funnel by the passing current, and water with food and oxygen surrounds the outer filtering surface of the sponge. A lot of sponges secrete chemicals that allow them to

bore holes in coral skeletons, and if you look closely at 'dead coral,' you'll often see bits of living sponge sticking out of cracks and holes.

FISH

The fish life around Cozumel is extremely diverse, and most of the abundant reef species in the Caribbean can be seen on dives.

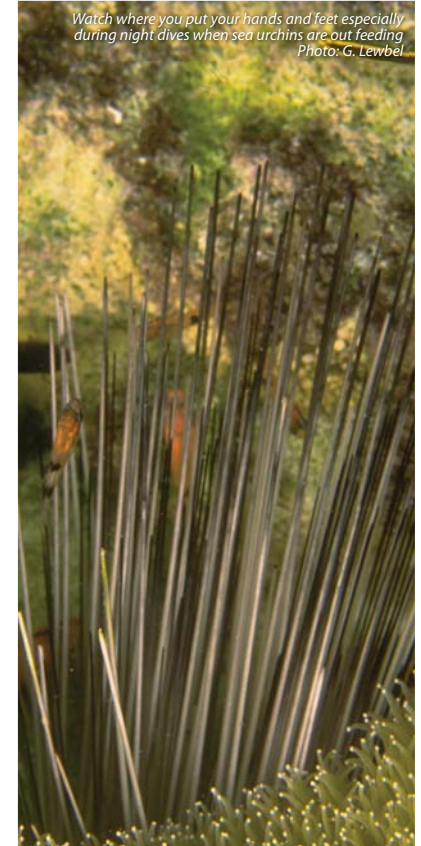
A few common nearshore species include yellow stingrays, barracudas, black groupers (hand-fed and tamed by divers on Palancar and Santa Rosa reefs, in particular), moray eels, angelfish, butterflyfish, wrasses, barjacks, grunts, snapper and triggerfish. Chubs and yellow and black barred sergeant-majors will surround you, begging for food. Damselfish will nip at you on every reef

COMMON HAZARDOUS MARINE ANIMALS

Cautionary Note

The authors of this book are marine biologists, not physicians, and accordingly, this book does not offer any medical advice. We hope that you'll use the information in this book to help you stay safe, but if you have any 'encounters of the worst kind' and sustain an injury, do not waste valuable time searching this book for words of wisdom on treatment. That's not why we wrote it, and we feel strongly that medical advice should be the province of medical providers.

Watch where you put your hands and feet especially during night dives when sea urchins are out feeding
Photo: G. Lewbel



and various parrotfish can be seen and heard breaking coral with their jaws. Bigeye, glasseye snappers, and glassy sweepers are often seen hiding in shaded crevices during the day. Despite the temptation to feed fish, keep in mind the practice is generally frowned upon by ecologists as it upsets normal fish eating habits and can encourage aggressive behavior.

Most photographers will want to search under coral heads at the edge of sandy patches for the elusive, splendid toadfish, a magnificent species in a family of fishes otherwise not known for their beauty.

The splendid toadfish is believed to be common only in the vicinity of Cozumel. While looking under ledges for toadfish, you may also see large spiny lobsters and crabs.

For medical assistance, ask your local dive guide, instructor or dive operator to contact a local doctor or the hospital, and of course DAN. You are a DAN member, aren't you?

Sea Urchins

The most common hazardous animal divers will encounter around Cozumel is the long-spined sea urchin. This urchin has spines capable of penetrating wetsuits, booties and gloves like a knife through butter. Injuries are nearly always immediately painful and sometimes become infected. Urchins are found at every diving depth, although they are more common in shallow water near shore, especially under coral heads. At night the urchins come out of their hiding places and are even easier to bump into. Your best defense (your only defense) is to keep your eyes open and not to touch any urchins, day or night.

Fire Coral

Fire coral is most common in shallow water but can grow as an encrusting form on dead gorgonians or coral at any depth.

A creamy tan or mustard color, with white tips at the end, it comes in a variety of shapes. Because it can overgrow other coral, such as sea fans, it is not always easy to distinguish. It often looks like thick, tan paint. Upon contact, the nematocysts (small stinging cells located on the polyps) will discharge into your skin, causing a burning sensation that usually goes away in a minute or two. In some individuals, contact results in red welts.

Coral cuts and scrapes can also irritate and frequently infect. The best way to stay safe is to control your buoyancy and avoid physical contact with the reef. This is good for both your health and the reef.



*Fire coral comes in a variety of shapes
Photo: G. Lewbel*



A few years ago there was a major die-off of sea urchins in the Caribbean. They are definitely back

Bristle or Fire Worms

Bristle worms, also called fire worms, can be found on most reefs with a little searching. They're beautiful to see but bad news to pick up. If you touch one with bare skin, it will embed tiny, stinging bristles in your skin and cause a burning sensation that may be followed by the development of a red spot or welt. The sensation is similar to touching fire coral or massaging one of those fuzzy, soft-looking cactuses on land. The bristles will eventually work their way out of your skin in a couple of days.

Sponges

Most sponges have fine spicules, and some species (so-called 'fire sponges') have a chemical irritant that is immediately painful. Although bright red color is sometimes a clue to the bad ones, it's not completely reliable. We have been stung by various innocuous-looking sponges, so as a general rule, we don't touch sponge tissue with bare skin, ever. If your dive gear has had an accidental encounter with a sponge, be careful to wash it thoroughly with a hose and/or a brush to get rid of the spicules and sponge tissue before you touch the gear with your bare skin. The stinging sensation usually goes away within a day but not always. Occasionally, contact with sponges results in serious allergic reactions.



Bristle or fire worms are pretty, but do not touch them!
Photo: G. Lewbel

A Splendid Toadfish



The splendid toadfish does not have a mellow personality and should not be pestered to pose. One of the authors of this book nearly drowned laughing underwater while a dive store owner on Cozumel tried to coax a splendid toadfish out from beneath a coral head at a depth of about 60ft, in order to help the author get a better, full-body photograph. The toadfish blasted out of his hole just long enough to take a chunk of the dive store owner's thumb right off, then raced back under the coral head before its picture could be taken.

Moray Eels

Moray eels are generally only dangerous if approached too closely or harassed. There are lots of morays under coral heads and in crevices. In recent years, divers at other islands have hand-fed morays (and occasionally been bitten), but fortunately this practice has not yet become widespread on Cozumel. Bites sometimes become infected and are very painful.

Green morays seem to be especially feisty. They can grow very large – according to scientific reports, up to 8ft (2.5m) long and up to 65 pounds (29kg) in weight.

One of the authors, who was involved in a scientific fish-tagging experiment, can attest personally to the biting ability of green morays (number of needle-like teeth, penetration depth, number of stitches required, etc). He had to be sewn back up by a doctor after a saturation dive.

The other author was chased off the bottom in an unprovoked attack by a green moray in the 6ft (2m) range. It happened during an otherwise casual night dive in front of a hotel in Cozumel. The eel emerged from the coral and followed him all the way from a depth of about 30ft to the surface, biting at his fins repeatedly until finally giving up after several thrilling minutes of being kicked.

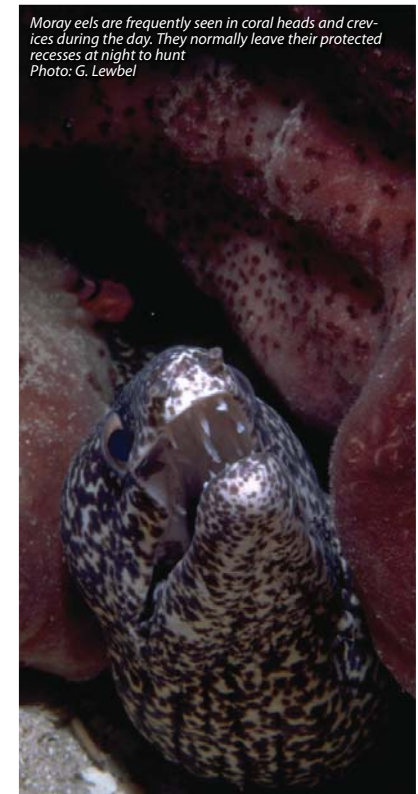
Rays

Sand flats around Cozumel are inhabited by two species of stingray; the southern stingray (very large, wary and difficult to approach), and the yellow stingray (small, well-camouflaged and easy to approach). Stingrays are not especially aggressive but don't take kindly to being sat on, patted or stepped on. If you leave them alone, they'll leave you alone. If you insist on a 1:1 macro shot of a stingray nostril you will probably be stung by the long, barbed stinger at the base of the tail. Wounds are always

Be wary, gentlemen!

Gentlemen, putting it politely, if you have touched a sponge with your bare hands or with gloves and still have any spicules on them, be VERY careful about your 'technique' the next time you drain your bladder. We speak from sad experience. You don't want to know any more than that and we're not going to tell you!

extremely painful – the stinger is coated with venomous tissue – and often deep and infective, and can cause serious or even life-threatening symptoms including severe allergic reactions and anaphylactic shock.



Moray eels are frequently seen in coral heads and crevices during the day. They normally leave their protected recesses at night to hunt
Photo: G. Lewbel

Barracudas are often difficult for divers to approach. The best tactic for getting a closer look is to hold still and wait for them to investigate you
Photo: G. Lewbel



Scorpionfish

Scorpionfish are well-camouflaged, small fish (usually less than a foot long) with poisonous spines hidden among their fins. They are often difficult to spot, since they typically sit quietly on the bottom looking more like plant-covered rocks than fish. As with stingrays, watch where you put your hands and knees and you're not likely to meet one the hard way. If you get stung, great pain and infection are likely, and severe allergic reactions are possible.

Sharks

Sharks are uncommon at most of the reefs around Cozumel. Sharks are reported more often at Maracaibo Reef than other sites, and nurse sharks are sometimes spotted sleeping – or just lying there pretending to be asleep – under ledges at Yocab and San Juan reefs. Please don't tug on nurse sharks' tails, by the way, even though it's tempting. They wake up grumpy and have bitten a number of divers in other locations. Any shark injury obviously calls for immediate medical attention.

Barracudas

Barracudas are included in this section mainly because of their undeserved reputation for ferocity. Admittedly there are a few reports of attacks on swimmers by barracudas in dirty water in other locations around the world, but on Cozumel you would be lucky to get one close enough for a good photograph. At night, however, you can sometimes get near to sleeping barracudas hanging in mid-water, waiting for you to take their pictures.

Spine Tingling

If you're reading this during a break from diving (rather than because you or your buddy has been stung by a ray!), perhaps you'll be amused or horrified to learn that stingray spines appear very frequently in pre-Columbian Mayan art. They were used as lancets in blood-letting religious rituals including tongue and penis-piercing. The resulting blood would be dripped on bark paper and burned as a sacrifice to the Mayan gods.

A well-camouflaged spotted scorpionfish rests almost motionless on a rocky surface
Photo: G. Lewbel



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