

undercurrent

The Private, Exclusive Guide for Serious Divers

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S/V Mandarin Siren, Raja Ampat, Indonesia and a starter with Bali's AquaMarine Diving

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Dear Fellow Diver:

More than 30 liveaboards visit Raja Ampat. Getting to them is arduous, and after two liveaboard trips there, I think I found the same (and more) critters, fish, and coral for much less trouble when I dived northeast and southeast Sulawesi -- and with much easier travel. My recent trip was on S/V Mandarin Siren, one of Worldwide Dive and Sail's newest boats. It was highly professional, well-run and interesting. But I still wonder: Why is this area so hot?

Does this mean Raja Ampat doesn't offer some great diving? Not at all. My log cites amazing creatures, including the blue-ring octopus, colorful mantis shrimp, sea fans big enough for two divers to hide behind, pygmy seahorses everywhere, barrel sponges as large as washing machines, turtles, mantas, rays, and glorious coral terraces sparkling with color and filled with life. Though I did see plenty of fish, there were rarely clouds of barracuda or jacks, and few sharks. I just question why so many divers are spending time and money going there when they can spend less, live on shore and see more in Sulawesi. Go ahead and hate me.

All Raja Ampat liveaboards depart from Sorong in Papua. Getting there from Bali requires a short flight to Makassar, overnighing, then a flight to Sorong the next morning (flights are often canceled or rescheduled). The Makassar airport is swank, but Sorong's is hot, crowded, small, smelly, and the return flight meant hours in the miserable waiting area. On this trip, only moments after arriving, Mandarin Siren's Dierdre Moore had me corralled and comfortable, while she ran interference on the bags.



S/V Mandarin Siren



As Mark Twain was credited with saying, "Everybody talks about the weather but nobody does anything about it." During my January trip, it rained and rained, and the sun never appeared for half of the days. (People told me there had been no dry season last year). I'm no Gene Kelly; raining does not make me sing. Because the weather affects so much, prepare for your trip by checking sites like NOAA (www.noaa.gov) and the National Weather Service (www.nws.gov). It's called the rainy season for a reason, and climate change makes it more unpredictable.

Alternating rain with patches of sun was typical among the many islands of Raja Ampat. Moderate to strong currents were also

the rule. Dive sites ranged from muck, coral, fish and critter, to scenery dives. Water was in the low 80s. Pulau Farondi's beautiful swim-through not only silhouetted divers, but also offered plump bargibanti pygmy seahorses and massive bump-head parrotfish. Mayhem at Pulau Yangeffo featured juvenile pinnate batfish, clouds of Moorish idols, jacks, fusiliers and rainbow runners, as well as a virtual carpet of wobbegong sharks. Gam Ridge was rich with schooling jacks, barracudas, batfish, fusiliers, some blacktip sharks, a nearly somnambulant juvenile wobbegong and hawks-bill turtles. Indeed, on many dives you can't avoid seeing the wobbegong, whose "carpet shark" nickname is apt. Its flat, reticulated surface is fringed with whiskers, and its seeming sloth often keeps the carpet stationary.

The best dives for me were at Manta Sandy, a sand patch next to a sparse reef. Giant Pacific mantas come here to be groomed by schools of wrasse and angelfishes. They line up the way we do at the bakery: Take a number and wait your turn. Some were entirely black, some had white on black bellies, some black on white -- each unique, like a fingerprint. I saw 22 on one dive. The grace of these giants was mesmerizing but the sand patch beneath was macro heaven, with pygmy pipe seahorses and exquisite Pegasus sea moths. I turned back and forth, admiring wingspans up to 22 feet overhead while using my 10x magnifying glass to delight in the tiny stuff. Hard to beat.

The 80-foot Mandarin Siren attracted me because it takes only six divers in four cabins, so it can dive sites the bigger boats can't. It's billed as a luxury liveaboard, with a computer setup in each cabin (no internet but you could upload photos and watch DVDs) and either twin bunks or larger beds in the V-berths. Storage is tight but manageable. Ensuite bathrooms were small and typical of liveaboards in Asia; the toilet, sink, and shower are in one small room, along with a bidet-like hose near the toilet, sometime leaving a small puddle on the floor, which felt funky if I crept in at night. They could solve this problem with a wooden grate over the floor.

The attentive, kind and hard-working staff made the tight quarters feel more luxurious. Cruise director and divemaster Dierdre Moore was charming, hilarious, and worked like a Trojan -- she really made the trip. She fit the itinerary to divers' interests and weather, showing flexibility rare on many liveaboards. She brought us north to the Yangeffo and Gam area, a 15-hour transit during which we enjoyed restful, restorative bunk diving. She checked sites prior to going in to make sure our entries fit the currents and the site. I also admired her briefings. Not only did she draw excellent underwater maps but included



The Mandarin Siren's Dive Deck

mnemonics for special sights (such as "the pink fan at 10 meters is right in front of the disco clam"). Dierdre created a trip narrative and careful log of all 34 dives, printed out for us at the end of the trip. Nita, the housekeeper, doubled as a fine massage therapist. Eagle-eyed dinghy driver Michael also worked as a part-time captain, steward and dive gear wrangler. Ari, the engineer helped with any technical problem as well as dive gear, and Captain Deng brought us safely through a bad squall.

Food was created in a minute galley by Chef Andre, and each meal offered fresh fruits and creative, well-presented western and Indonesian options. Provisions come largely from

Sorong, so don't expect the finest meats or veggies, but Andre worked hard to make the beef or chicken tender and, if not, at least very tasty. He did not over-spice food but created intensely hot sambals for me when I requested. Dinner always began with a soup, followed by a display of dishes that Andre described. Most meals offered three entrees and at least three side dishes. Beer and soft drinks were included, and one could buy bottles of wine for \$42 or cocktails for about \$7. The salon coffeemaker ground beans on demand and created coffee ranging from espresso to regular.

If you are a photographer, the electronics will delight -- direct computer hookup to a large flat-screen TV in the salon -- but the small dive deck size means you might have to keep some of your gear in the salon. The two photographers on this trip worked it out, but I cannot imagine that boat hosting more than two gear-intensive photographers without fistfights. The dive deck was carefully organized, with drawers for masks, defog, gloves and so forth. Once my BC was on my tank, it stayed there. All dives were done on Nitrox, which was included in the trip price. The dive staff does everything for you, including washing wetsuits and skins in an antibacterial solution. Dives are done from an inflatable, entering with a backroll. The crew helped me put on my BC in the water when my back hurt, and if I surfaced early or distant, Michael found me immediately. He hauled in my BC, tank, fins and weights, because the ladder was short and the round steel "steps" challenging to ascend. A few dolphin-hybrid divers simply kicked their way over the side.

I liked the intimacy of the Mandarin Siren, but had I not booked with close friends, it might have soured. The upsides are no crowded dive sites and great service, the downside is that though efficient, the boat is small. But the last time I dove Raja Ampat was on a large liveaboard, and this time I loved not getting pushed aside by videographers with giant rigs or being stuck in a crowd. But don't overpack. All you need besides swimsuits and dive gear are sweats, tees, sarongs and shorts.

I would definitely book with Worldwide Dive and Sail again. I have never enjoyed such attentive service on a boat, as well as quick responses to pre-trip queries. The company seems committed to service. But I wouldn't dive Raja Ampat again. I believe it has too many liveaboards, and its diving is not clearly better than easier areas to reach (like Manado/Lembeh/Bunaken or Wakatobi on Sulawesi) to merit the expense and difficulty of getting there. I respect the care dive advocates like Maurine Shimlock and Burt Jones give Raja Ampat (their book, Diving Indonesia's Raja Ampat, is beautiful, informative and required reading for diving the area), and perhaps there's a great trip there I just don't know of. Convince me, deliver the goods, and I'll go.

S/V Mandarin Siren, Raja Ampat

Diving (<i>experienced</i>)	★★★★1/2
Diving (<i>beginners - currents are too rough</i>)	★
Snorkeling (<i>ditto</i>)	★
Accommodations	★★★
Food	★★★★1/2
Service and Attitude	★★★★★
Money's Worth	★★★★

★ = poor ★★★★★ = excellent

Worldwide Scale

I began and ended this trip in Bali. After an 18-hour flight to Hong Kong and connection the next day to Bali, I hopped into a van from Aquamarine Diving for a 3.5 hour ride over the mountains of central Bali in dense fog and rain on hairpin turns and over enormous potholes to the Menjangan Island area. My dive buddy and I were the only Americans staying at Puri Ganesha villas in Permuteran, but \$800 per

The Raja Ampat Debate

Undercurrent *webmaster Dave Eagleray has lived in Bali for more than a decade. I asked him to weigh in on our Raja Ampat article, then asked our correspondent for a response. Here's Dave's take:*

I disagree that “diving is better on Sulawesi” whether northeast or southeast – and so would everyone else I know here who dives around Indonesia. I’ve been to all those places and many more, including four trips to Raja Ampat and another 15 or so trips to Bunaken, Lembah, Wakatobi, Halmahera, Banda Sea, Komodo, Flores, Alor, east Nusa Tenggara and Bali. Raja Ampat is not a strange critter haven, nor one with lots of pelagics or big fish – it has just tons of fish and corals, many different kinds of fish and corals – it’s mind-blowing and outdoes any other place on that front. Look at any of the studies by marine-life gurus like Gerry Allen, Roger Steene and Mark Erdmann. They’re the ones most excited about it, mostly because of the sheer numbers of different species that can be found there, as well as the brand-new species discovered. But for critters, go to Lembah Strait or Komodo and the eastern Sundah Islands. Big stuff in Indonesia is relatively rare, but found in some places. Diving there is good to great almost anywhere you go but different people have different tastes. And diving any place always depends on conditions at the time, with some fabulous spots appearing ho-hum if conditions, such as currents, aren’t right. In any event, that’s why Raja Ampat is so popular with divers who’ve been to many parts of Indonesia, and that’s why there are more than 30 boats operating there, plus a number of resorts (Grand Komodo has a resort there now, Max Ammer has two and more are coming).

Our correspondent's reply: Obviously your webmaster has more Indonesia diving experience than I have; however, I’ve run this idea by a few folks with lots of Indo diving experience, and they agree with me. But Dave’s point about the number of fish is a good one. Although there are some wonderful fishy sightings in Sulawesi and Bali, I did see lots of fish in Raja Ampat, though rarely anything very unusual. Raja Ampat is touted as ground zero for coral speciation, and a top area for fishes and critters as well, but how many of us dive in order to tot up taxonomic lists of corals? The experience of diving isn’t just about counting things, it’s about seeing, floating, being enchanted. Hence, my respect for the speciation of Raja Ampat abides, but I don’t think it equates with magical diving. The other guests on the boat had recently come from a trip to the Andamans, where they thought the fish count (and the weather) was mind-blowing, but their minds were not blown by Raja Ampat, though they enjoyed it. They just didn’t think it was as good, particularly considering the trouble of getting there.

Then there is a generational issue. For those of us who have dived places like the Solomons, Papua New Guinea, Cocos, Palau, Galapagos, Australia, Fiji, the Red Sea, etc., before the advent of intensive shark-fin fishing and trawling, seeing lots of fish was expected, not unusual. It’s possible that those divers who never experienced the glory days before commercial and illegal fishing swept oceans of their apex predators are delighted by a big school of jacks or fusiliers. I yearn for swirling clouds of tuna and barracuda with swordfish darting through. Tragically, those days are over, so younger divers who see the schools at Raja Ampat are thrilled, whereas those of us lucky enough to have dived before the mid-1990s recall what a really fishy site looks like. The fish at Raja Ampat don’t register in that timbre, a timbre gone forever.

Dave is correct about seeing big stuff in the Lombok Strait off east Bali but even there, it’s a few at times rather than the “tons and tons” he cites in Raja Ampat. I don’t want to put on my old fart hat, but will anyway. If you knew the oceans before aggressive fishing, your expectations of diving are different (just like I remember 25-cent gas). I believe one reason the focus of much diving has changed toward macro and the weird and wonderful is because it’s still there – commercial fishing has no use for a wonderpus or inamincus or frogfish. Maybe the real issue is rising acidity hasn’t hit the seas around Raja Ampat too hard yet, and it’s not as highly fished as some areas, so the fish one does see look terrific by contrast to other places.

For someone already living in Indonesia, crummy flights for six hours between islands isn’t that bad. For someone who has blown \$10,000, is worn out from 24 to 30 hours of multiple flights, jet-lagged and weary, the addition of more flights and a short yet slightly hairy overnight makes you want diving that blows your mind, the mind that recalls seas filled with fish blocking the sun. Even after a few days of pampering in a nice hotel, your butt isn’t ready for the pain of Indonesian airlines.

night in this inexpensive country keeps many away unless you have a reason to splurge. Our villa had two floors with enormous porches and a private pool, long enough for laps. The living room had an iPod dock; outside was a small bale to take meals or relax in. Puri Ganesha is quirky and rustic, with touches of luxury and cheap irritations. Each villa is staffed by a butler and maid who serve you from the limited breakfast menu, bring towels and see to your needs. Yet power outlets were scarce, the dark towels dried slowly if at all, and illumination in the villa was generally suitable for owls rather than aging human eyes. Furnishings are largely antiques and handmade, meaning texture and beauty but not sleek or modern. If the latest in spa equipment or electronics is what you want, don't come here.

The food is delicious, and owner Diana Von Cranach prides herself on creating dishes reflecting local offerings. Beware the cocktail called the Elephant's Footprint -- made from quality Arak, juices and spices, it goes down easily and packs a wallop. The small spa is staffed by Putu, a local Balinese healer and priest whose hands seek out what ails you and can even leave you bruised but ultimately feeling better.

For years, I have used expat Brit Annabel Thomas's AquaMarine Diving when in Bali. Being detail-minded, she is my kind of person, so when the plane touched down, the service began with expedited immigration and customs for an extra \$30 per traveler (well worth it -- I was out of the airport in 20 minutes). AquaMarine's vans, all Isuzu diesels, are roomy but noisy, particularly when hauling you over mountains and rough roads. My dive buddy described Balinese traffic as schooling fish -- all driving on what we think is the wrong side of the road, yet they seem to sense who is where -- but it's hairy for an American. Word to the wise: Leave driving to the locals.

AquaMarine staff picked me up from Puri Ganesha at 8 a.m. on my first dive day and drove to the port from which local boats put-put out to Menjangan Island. Mud and dirty bathrooms with Turkish toilets come with. The constant rain had washed up a huge amount of garbage on its volcanic sand, and the winds and currents brought garbage into the waters around the dive sites. There is no regular garbage service for Bali, so people throw it in the rivers, where it washes out to sea, especially during the rainy season. The Jakarta Post ran an article about garbage on Balinese beaches and local efforts to clean them up, yet despite some folks' efforts, garbage floated around dive sites and washed up on the beaches.

The ride to Menjangan Island in a small wooden boat was slow, about 30 minutes, with unpadding seats making it feel longer. But the captain and Aan, the divemaster, were excellent, wrangling gear and choosing sites as conditions allowed. Indeed, Aan was extraordinary, not just in finding creatures but in service. My dive buddy's pressure with a proprietary slip-off mount broke and Aan MCGuyvered a neat substitute that won't fall off and fits virtually all mounts. But not even his competence could control the weather. Rough seas confined us to the less interesting leeward side of the

The Latest Smuggling Device: Scuba Scooters

A wetsuit-clad man and a teenager were arrested in Imperial Beach, CA, on February 3 after allegedly swimming around the U.S./Mexico international border with the aid of two diver-propulsion vehicles. The two men became the object of Border Patrol's attention when one of its helicopters reportedly spotted them walking north along the beach at 8:45 p.m., with scuba scooters in hand. When land-based Border Patrol agents approached, the two attempted to conceal themselves by lying down and covering themselves with sand. After interviewing the duo, the agents found them to be Mexican nationals who allegedly used the devices to illegally enter the U.S. Because the men didn't have any scuba gear, the agents suspect they didn't attempt the crossing underwater. The scuba scooters were confiscated.

Using scuba scooters to help swim around the border fence may seem odd, but when drug cartels charge prospective illegal immigrants between \$1,500 and \$4,000 to cross the border -- and possibly keep them locked up while extorting more money from their relatives -- an entry-level scuba scooter, starting at \$700, could be an attractive alternative. Typically, a scuba scooter will pull one along at 3 to 4 m.p.h. for at least an hour, plenty of time to pull you around the partly submerged fence between Tijuana and Imperial Beach.

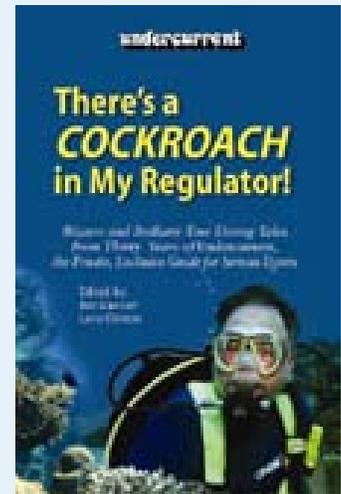
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of the yellow fin in the sand . . . Caribbean sea lice drive divers crazy . . . dive equipment of the future: what 1985 predictions came true . . . and much, much more.

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island. The third day of diving succumbed to howling winds and rains, and I gave up trying to dive an area afflicted with undiveable weather. The best of the five dives I did was at Temple Point, just past the leeward side. Its small wall yielded eels as burly as tree trunks, as well as small flame dartfish, several species of anemonefishes (including the rare *biocellatus*) and a large cuttlefish. But I can't form a valid opinion about the diving, as five dives in a small leeward area of Menjangan hardly qualifies me to review the area. Again, when planning a trip, keep seasons in mind.

Ironically, I chose northwest Bali because it had the reputation for being sunny and dry even in the rainy season, and because I had never been there. Menjangan Island and Secret Bay were the first Balinese dive areas to be discovered, and though they have suffered from being overly loved, I was eager to see a new area. Secret Bay (which we never got to due to bad weather) is known for muck, whereas Menjangan Island offers coral patches, mini-walls, and bigger animals. Eastern Bali, off Manggis and Padangbai, is an exciting area of small islands, fierce currents, thermoclines, great corals and always thrilling diving, though not recommended for anyone uncomfortable with current. The channel between Bali and Lombok mixes the Pacific and Indian oceans, with serious tidal changes. The upside is the chance to see creatures belonging to both oceans.

-- A.E.L.



Diver's Compass: Cathay Pacific, my preferred airline, flies directly to Hong Kong from JFK, SFO, and LAX, with connecting flights to Bali via Hong Kong . . . Other options include Continental via Hong Kong (the better HKG airport hotel is the Marriott if you need to stay over) or Singapore Airlines via Singapore . . . Flights between Bali, Makassar and Sorong average \$150 per leg, so budget at least \$500 for inter-island travel; the planes are uniformly uncomfortable for anyone over 5'5". . . A 10-day trip on the Mandarin Siren is about \$3,000, depending on the exchange rate; for

Raja Ampat, a marine park fee of \$110 for the 10-day trip is mandatory . . . The boat offers 3mm shorties, regulators, BCDs and fins at no extra charge; if you lack a computer, they rightly require you to use one of theirs at \$7 per day . . . The bill for drinks, other purchases and tips must be paid in cash at the end of the trip, so come prepared; they accept U.S. dollars, Euros, U.K. pounds and the local currency of Indonesian rupiah), and ATMs work in some places (staff knows where) . . . I highly recommend the books Reef Fish Identification: Tropical Pacific and the new Reef Creature Identification: Tropical Pacific, available at www.undercurrent.org/UCnow/bookpicks.shtml . . . Amankila prices range from \$850 to \$2,950 and include whatever you wish for breakfast but not other meals or local taxes . . . AquaMarine Diving offers a variety of trips, averaging \$110 for two tanks, lunch

and drinks, all transport, weights, booties, fins, masks, towels and whatever local fees are assessed; AquaMarine not only offers diving but will book lodging and transport, and expedite airport immigration service . . . Websites: Mandarin Siren - worldwidediveandsail.com; Puri Ganesha Villas in Bali - www.puriganesha.com; AquaMarine Diving - www.aquamarinediving.com

The Cost of Search and Rescue Missions

who foots the bill for finding lost divers?

In New Zealand in January, scuba diver Colin Smithies was the subject of a massive air-and sea search involving 40 volunteers after he went missing while diving in Dunedin's Titahi Bay. Then two days later, Smithies, 49, strolled into a police station 185 miles from where he was reported missing. Apparently he left Titahi Bay and hitchhiked north, showing up disoriented and distressed. His mental condition did not make authorities sympathetic; they charged him \$50,000 for wasting police time and gave him a court date.

While Smithies seems to have played a stupid game, whether to recover costs related to Search and Rescue (SAR) operations has become a big issue in recent years. In many countries, SAR entities now make it standard practice to charge mountain climbers, hikers, snow skiers and snowmobilers if they cause their own emergency. The costs are huge and have a big impact on government budgets, so in the U.S., municipalities and states feel justified in trying to get back their expenses from people who flagrantly disregard their own safety and then expect to be rescued at the taxpayers' expense. Their actions also risk the lives of rescuers who go after them in dangerous conditions.

A Sore Subject for the U.S. Coast Guard

At sea, it's a broader discussion than just "divers," because the responding team also has to deal with evacuations for injuries that occur on vessels, body recoveries, towing emergencies, searches for passengers who go missing, as well as divers who get left behind. It's a sore subject for the U.S. Coast Guard

(USCG), local police, public safety, marine patrol and water response teams. Historically, such emergency efforts were performed as part of the "mission" of the agency that was first on the response list. In coastal waters (within 10 miles or so of shore), sometimes municipal or town SAR teams made the effort, often with volunteers acting either in concert with official responders or independently when no other resources existed. Local police or marine patrol teams may have a limited staff, and one or two smaller boats to scramble quickly. They may have better local knowledge of the immediate area. But they will usually not have aircraft or experts trained in computer modeling predicted drift paths of persons in the water. Their small staffs will also be limited by on-site hours and fatigue.

The USCG has always been the "go-to" best solution, due to their expertise, communications capabilities, surveillance aircraft, surface vessels and small high-speed boats. In many cases, a proper SAR team needs staff trained in rescue swimming, medical care, specific navigational tracking and predicted location capabilities who use computer models and oceanographic "hind-casting."

Just imagine the cost of an operation that can span days and tie up scores of staff, divert of resources from other missions, have high fuel costs, etc. One SAR operation for two missing divers in 2003 off Cocos Island in Costa Rica involved both the USCG and the Costa Rican Coast Guard. The five-day search covered thousands of square miles. The cost, if actually billed, would have been staggering - - in excess of \$3 million.

In Europe, it's a different story. Outdoor enthusiasts are responsible for themselves, and many have insurance to cover costs should they need to be rescued. In the U.S., however, whether you have to pay depends on where you are

The cost, if actually billed, for a five-day search for two missing divers off of Cocos Island would be more than \$3 million.

when you get into trouble. In national parks and in U.S. coastal waters, the government picks up the tab for your rescue. Even if you were to take your own dive boat out into the Atlantic in the middle of a hurricane, and the USCG had to use a 110-foot patrol boat (which costs upwards of \$1,100 per hour) or a C-130 turboprop airplane (\$7,600 per hour), you wouldn't pay a dime. "If you get yourself in trouble, regardless of the circumstances, that doesn't weigh into any factor in our response," says Captain David McBride, chief of the USCG's Office of Search and Rescue.

It is another story if you run out of gas. Don't expect the USCG to race over to tow you to shore. It will give you contact info for a towing company or put out an alert to good "sea-maritans" who might be able to help you out gratis, but it will only tow you in as a last resort -- and still free of charge. The only time the USCG gets money back for rescues is when it is the victim of a hoax.

Will Federal Deficits Change The "Free Rescue" Policy?

Because of the Federal deficit, will there be changes to the policy on free rescues? McBride says no -- at least not yet. "Every couple of years, some major case has come up and made officials ask, unfortunately, 'Where do you draw the line?' In most SAR cases, the people being rescued were in a position they should not have been in, taking excessive risk by not taking standard precautions or not being adequately equipped. That has been one of biggest difficulties when the consideration [of charging] came up."

Besides the USCG, Australia and England have started to take a serious look at assessing costs, and have done so in some instances. This is mostly targeted at persons or boaters who have acted irresponsibly and essentially created their own problems by imprudent seamanship or bad practices. In the case of diving, much of the USCG's ire has been the result of divers being left abandoned by careless logging of divers on and off the vessel.

Take the Daniel Carlock case that we have reported on (see the November 2010 issue of *Undercurrent*). He went diving on a boat chartered by Ocean Adventures, a dive shop in Los Angeles. Carlock went with 19 others on the first dive. When he surfaced, he was 400 feet downcurrent from the drifting dive boat. He floated in his inflated BC,

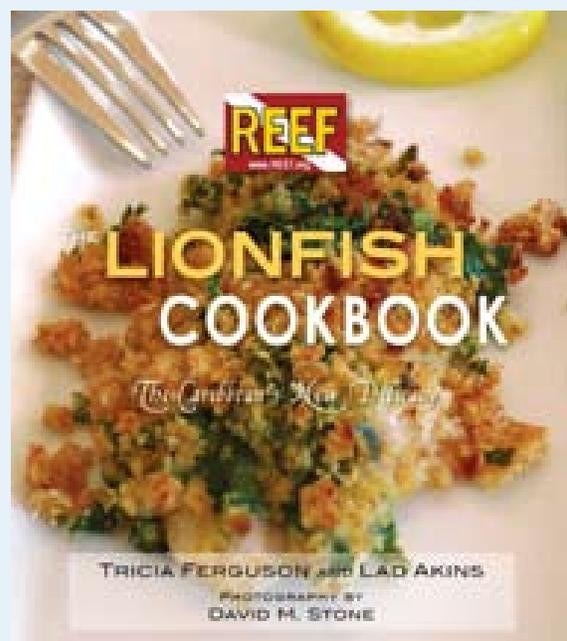
The Lionfish Cookbook

We've written much about lionfish, and how the Pacific native is proliferating in the Atlantic and the Caribbean. Marine experts say the lionfish is a major threat, ruining reefs by eating the native species. Lad Akins, director of operations for REEF, is one of the loudest voices, and his belief is that humans are the best hope as the lionfish predator. "If you can't beat 'em, eat 'em," is Akins' motto. He just put his money where his mouth is, by working with REEF staff and a high-end chef to create *The Lionfish Cookbook*.

"Lionfish roundups" are now happening all over the Caribbean, and a growing number of cooks are using them at their restaurants in the Caribbean, Florida, and East Coast cities. Lionfish have a delicate, mild-flavored, white meat. Some chefs say they taste somewhere between a grouper and a snapper, while some North Carolina divers we know who round them up off their coast say "they taste just like chicken."

Akins worked with Tricia Ferguson, a "personal chef to the stars" on Bahamas' Harbour Island, to create 45 lionfish-based recipes, each with a full-color photo. The cookbook also has background on the lionfish invasion and its impacts, and details on how to effectively catch, handle and prepare the fish. If you're renting a house in Florida

or the Caribbean and participate in a lionfish roundup, take a few lionfish home and whip out this cookbook to prepare a tasty dinner. The paperback costs \$16.95 on Amazon.com; click on the link in our "Books" section at www.undercurrent.org, and a portion of the proceeds goes to our efforts to save reefs and their inhabitants.



blew his whistle and waved a safety sausage, but the crew never saw him and the boat motored away without him. Amazingly, he was erroneously logged back aboard during a roll call by the divemasters. He was not missed until the end of the second dive, and even then he was listed as having participated on that dive. So a USCG-led search was begun at that site rather than where he was actually left. He was found four hours later when a boat carrying teenage Sea Scouts spotted him. (Carlock sued and was awarded \$1.68 million last year by a jury in California.)

Of course, governments filing an action to collect their expenses doesn't guarantee recovery from the persons. Officers responsible for marine inspection and oversight to U.S. passenger vessels have let their frustration be known to captains and crew with license suspensions, sanctions, outright revocations, fines to vessel operators, and mandated safety remediation seminars. Expect more vigorous actions in the future since these unwarranted breaches of safety cost extraordinary amounts of money and divert the USCG (and other countries' agencies) from their primary duties.

In remote areas, like Chuuk, "There's no government anything coming to look for you."

McBride says don't be surprised if you're presented a bill for being rescued after getting into trouble while diving in a lake or quarry. Colorado, Utah and Oregon have state laws that allow their agencies to charge victims for rescues. With states falling victims to their own budget deficits, the issue of cost recovery could soon be examined by other states.

What Happens Overseas

Outside the U.S., countries like England, Australia, Norway, Sweden, and a few others have excellent similar government and local response capabilities. Australia, for example, has a cooperative SAR plan, involving federal authorities, state police and water police, and support from volunteer marine SAR agencies. The charge to any rescuee, except for pranksters, is nil. "We provide assistance to any person in distress at sea, regardless of the nationality or status or the circumstances in which the person is found," says an AMSA spokesperson.

Craig Stephen, operations manager for Mike Ball Dive Expeditions in Queensland, Australia, says it's not uncommon for AMSA to perform rescues over 52.8 million square kilometers of the Indian, Pacific and Southern Oceans. "Australian authorities have vessels throughout the region and work with other nations as situations arise."

But many nations, especially those without traditional maritime industries, lack even rudimentary SAR infrastructure. In fact, most roles of SAR will be fulfilled by private operators or volunteer teams. Though well intended, these efforts will frequently be vastly ineffective.

If you dive in the Caribbean, you can rest assured that SAR missions are often well-coordinated, says Clay McCardell of Explorer Ventures, which has liveaboard itineraries in the Bahamas, Turks & Caicos and Saba. "Many islands we visit have some SAR, although it's mostly volunteer organizations. But the Coast Guard has a major presence in the Caribbean, and if someone sends out a mayday, local dive boats, liveaboards, any boat with a radio will come out to help."

Meanwhile, over on the Pacific coast, Alan Steenstrup of the Undersea Hunter Group of liveaboards says, "I know that the Costa Rican Coast Guard does not necessarily have the resources to do a major SAR at any given time. On some occasions, the USCG might actually be included if they are in the area (and especially if a U.S. citizen is involved), but it will probably be on a lesser scale than if it were to happen in U.S. waters."

In remote areas like Micronesia, it may be a different story. Cliff Horton, business manager for Odyssey Adventures, which operates the *Truk Odyssey*, says the island-nation of Chuuk has no Coast Guard, "so there's no government anything coming to look for you. Luckily where we are, there's no current, so lost divers don't get far."

How liveaboards handle SAR missions varies from operator to operator. Some have excellent protocols for SAR, with regularly planned safety drills, detailed briefings for both crew and guests, and supply guests with sonic-noise signal devices such as the Dive Alert, emergency locator equipment such as EPIRBs or GPS transponders, safety

sausages, flares and smoke signals. But most vessels, particularly outside the U.S., leave safety equipment up to individual divers as their own responsibility. And if you're counting on a Third World operator to find you if you drift off or fail to make rendezvous with the pickup point at the end of a dive... well, pack a lunch and be prepared to take a very proactive role in saving yourself. That's the sad reality.

Your trip insurance will usually not cover SAR, especially if the costs are assessed by a government entity. Trip insurance and diver medical insurance (such as that offered through DAN) will cover evacuation and treatment once a diver is recovered, but is not likely to pay the costs of the actual search.

Should Divers Be Held More Responsible?

McBride of the USCG says the main reason why SAR missions may continue to be done free of charge to the lost-and-found diver is because authorities don't want people to avoid calling for help if they think there's a million-dollar price tag attached. "We don't want them to have any apprehension about calling us, because the longer the wait, the more dangerous the situation they could find themselves in."

But should lost divers be responsible for footing some or all of the bill? Divers need to be personally responsible to a reasonable degree. If you don't follow a dive plan, ignore protocols for currents/drift dives, or disregard time durations that cause you to be where you shouldn't be when the boat is trying to pick you up, then that's your fault. We don't mean to suggest that anyone should be allowed to drift away into oblivion, but it would be fair to assess some financial charge to find them. It impacts all the other divers onboard as well, since the entire operation has to shut down and passenger-diving stops while a search is conducted.

On the other hand, sometimes divers follow all instructions and conditions change, an obscuring rain storm develops, wiping out surface visibility, currents reverse, ocean swells increase, an equipment failure causes an unexpected deviation from dive plan, etc. In these instances, it's really no one's fault except good old "Murphy's Law." Divers shouldn't be blamed or charged in these circumstances.

"Expect the unexpected." Never assume that things will go without incident or as planned. If you're making a shore dive, tell someone back on land your dive plans and ETA. If you go in the water with the mindset that things can, and will, go wrong, you'll be better prepared for that contingency. Pay attention, think ahead, consider the "worst-case scenario" at all times. You can always be pleasantly surprised when everything does go right -- but don't count on it.

-- Bret Gilliam and Ben Davison

For Regulators, Light is Right

seven lightweight regulators that are heavy duty for dive trips

Your regulator is not the heaviest item of equipment you might carry to an exotic diving destination; however, manufacturers have latched on to the appeal of producing lightweight equipment to save excess-baggage charges. I guess if you can save a couple pounds, you can carry a few extra T-shirts instead, and as someone who is often reduced to the minimum when it comes to packing clothes, it certainly appeals to me.

Working as a team with Nigel Wade, a veteran of comparison tests, I got hold of the seven regulators sold in the U.S. that weigh the least in their given brand line-ups and we tried them at depth, side-by-side. We conducted the tests at Taba in Egypt, close to the border with Israel, because there is deep, clear water near the shore, and we were able to dive without interruption or the need for a boat. We made several dives with each regulator, each of us using them two at a time on our independent twin-tank setups. Leisure divers rarely go deeper than 100 feet while on vacation, so we settled on 140 feet, while breathing Nitrox 30, as our test depth, probably the greatest depth a single-tank diver is likely to find himself at, even in an emergency.

It's important to know that your regulator will perform to expectations, especially if you find yourself sharing via an octopus with another diver at that depth. We checked to see if each one was capable of delivering gas to two divers who might be breathing heavily while sharing off an octopus at depth. We inverted each one, as a panicking diver might in an air-sharing situation, to find out how viable each was under those circumstances. We checked out the efficacy of the purge control of each and let each drop from the mouth as a diver might carelessly, to find out what loss of gas might be encountered. The Venturi plus/minus (dive/pre-dive) control was compared at depth to see if it made a difference. Lastly, we looked at how disruptive the flow of exhaust bubbles was when a diver was stationary and looking directly forward. We weighed them as first and second-stage only, connected by the hose, and not with any octopus rigs fitted. A-clamp versions naturally weigh more, because of the extra metal, than those with DIN connections. Here are the results, listed in alphabetic order by manufacturer.



Atomic T2X

Apeks Flight (A-clamp); 1.6 pounds; \$760 list price. When the people at Apeks set out to make the world's lightest regulator, they employed new high-tech thermoplastics so that the second stage was as light as can be. The diaphragm-style first stage is still a bit of a lump, but it continues with the Apeks tradition of top performance at depth. It has an ingenious design that comprises a strong, forged solid brass skeletal body, surrounded by the plastic jacket material. The two are connected by a lightweight, intermediate braided hose with a unique connection that disbars the diver from swapping to a longer hose if that was preferred. By the second dive, the action of breathing had become slightly wet, suggesting a poorly-located exhaust mushroom valve. The inter-stage pressure was obviously set too high, because the pressure would build up between breaths, causing the second stage to bleed gas. With two divers inhaling as hard as possible at depth, the delivery was as generous and sure as at any other time. Inverted, it was wetter, with bigger droplets of water to contend with than we would have liked. The purge button was disappointing because if you pressed the wrong part, the purge was weak and, in some places, it would not purge at all. When it was at full flow, it felt strong enough to purge the regulator, but we did not feel that any air rushed into the mouth. When dropped carelessly from the mouth, it did not free flow at all, excellent in that respect. There seemed to be no discernible effect with the Venturi lever in either position while at depth. Exhaled bubbles were relatively disruptive to vision when stationary. Overall, it was a very comfortable regulator to use at any depth, although we felt the example we were using could have been improved by a competent technician. We were expecting big things from Apeks, but all the other regulators tested seemed at least as adequate when breathing normally from them. (www.aqualung.com/us/content/view/102/280)

Atomic T2X (A-clamp); 1.85 pounds; \$1,550. This titanium, balanced-piston first stage weighs little. It is combined with a second stage that has a unique, automatic depth-sensitive Venturi adjustment and a comfortable mouthpiece. One unusual design feature means the valve seat stays out of contact with the poppet, so there's no engraving during storage with subsequent unwanted free-flows. It doesn't need servicing for up to three years. It squeaked and creaked at first at the surface, but not when it was submerged, where it provided a wide funnel of air that diffused into the mouth, thanks to a wonderful mouthpiece and the beautifully machined universal joint on the hose junction that takes the stress out of hose routing. Inverted, it provided only a fine mist of water that was totally manageable for uninterrupted breathing. The Venturi was depth-sensitive and automatically adjusted, but it did tend to momentarily gush a free-flow when carelessly dropped out of the mouth. Once the valve cracking-pressure control was turned down a little, it wouldn't do it. Turning it face-up stopped that immediately, too. The purge control was sublime in its efficacy, easy to locate, and gave total control of how much air it passed to the diver, although we had to push it in a long way to get a lot of flow, when it will give a full tonsil rattling. With two up breathing heavily, there was no discernable difference in its performance. The exhaust-T was not totally perfect for no visual disruption but overall, it really instilled confidence and was excellent. The price says it all. (www.atomicaquatics.com)



Oceanic Alpha 8 SP5

Beuchat VRT 30 (A-clamp); 2.3 pounds; \$275. It never ceases to surprise us that Beuchat is often considered to be a new brand when it is probably the longest-established French manufacturer of dive gear. In fact, it makes a lot of stuff on behalf of other brands, too. This VRT 30 has a very nice and neat second stage, combined with a beautifully finished piston-style first stage. That said, it was the only one that did not give sufficient space between the ports to allow convenient fitting of a gas-integrated computer transmitter, and it was among the heaviest tested here. Inverted, it felt wet, with large droplets of water to deal with, making it feel very uncomfortable and certainly wetter than I would have liked. The purge control was small but instantly accessible, progressive from weak to strong, delivering plenty of air, without any pitfalls. It doesn't overflow. We thought it was comfortable

to breathe from. There were no squeaks when sipping air. It gives a lot of confidence because it doesn't feel like it's going to let you down. We thought it to be a good workhorse regulator. It did not free flow whatsoever when dropped from the mouth at depth with the Venturi switch on minus, but free flowed alarmingly on the plus position. The exhaust-T was very small, and exhaled bubbles caused some disruption of vision when stationary. The first stage fluttered like hammer-drill, with two of us inhaling hard together from two second stages connected to it while at depth. It was not the biggest performer, but very adequate, and despite its failings under duress, I favored it for comfort over the one I had alongside it during our long ascents. (www.beuchat-usa.com)

Cressi Ellipse Black MC5 (DIN) 1.6 pounds; \$300. This Ellipse has a little MC5 diaphragm-type first stage, combined with a lightweight second stage that has a novel oval shape. Although it had a slightly mechanical feel, the effort of breathing could not be faulted. Even with two divers heaving off it as hard as they could at 130 feet, it delivered without hesitation, though it might have been a little noisier at this time than some others. The purge seemed gentle, and we looked for a sweet spot, thinking it might provide a big rush of gas, but it did not. However, it cleared the regulator of water in a moment, and there was not a hint of an uncontrollable free flow. Carelessly dropped from the mouth, it released air only for a moment, despite the position of the Venturi control. In fact, the Venturi control made little difference to breathing at depth, so I left it permanently in the minus position. Inverted, it proved to be one of the drier we tried, at all angles. Exhaled bubbles came up straight around the face when looking straight ahead, and I chose to incline my head nose-down to counteract that. (www.cressi.it/Catalogue)

Halcyon Aura/H50D (DIN with 40-inch hose); 2.1 pounds; \$490. If you have mistaken this for a Scubapro Mk17 diaphragm first stage combined with an R395 second stage, you may be forgiven. Taking on a new aura and wearing the colors of the Halcyon brand, this high-performing, cold-water regulator is very comfortable. It felt lightweight and gave a nice, comfortable breathe, although the gas supply felt diffused, filling my mouth without being whooshy. There was no degradation of performance with two divers breathing from it as hard as we could at the maximum depth. The purge is easy to locate, and was positive and progressive with little resistance, delivering more than enough gas with a powerful blast if required. Inverted, it could still be comfortably breathed from, despite an ingress of water that was turned into a fine mist. When dropped from the mouth at depth, it steadfastly refused to free flow in any Venturi setting; neither did these settings appear to affect the work of breathing at depth. The exhaled bubbles were a little disruptive, coming up in front of my eyes when looking straight ahead. (www.halcyon.net)

Mares Carbon 42 (A-clamp); 2.2 pounds; \$1,000. Carbon fiber is used extensively in the airframes of airliners, so it's no surprise to find a regulator manufacturer using it in a second stage, despite it looking a bit like recycled plastic. This one combines with the mini M42 diaphragm-type first stage and lightweight braided hose to provide a low, all-up weight. Having said that, the first stage is heavier than would at first appear. Nevertheless, the port arrangement of this first stage made hose-routing a dream. We found no change in performance under the duress of two heavy breathers at depth. Inverted, it was slightly damp because of a fine mist but still very usable. The valve could be heard opening and closing. The purge control was easily accessed, progressive in action from weak to medium flow, and obviously better when shallower than 65 feet, but with no tremendous rush of air that can

catch an unsuspecting diver off-guard. It gave a nice comfortable breathe, and delivered air at all rates with a low, cracking pressure, and no squeaks when only sipping air. Although it obviously has a big capacity to deliver, the valve was slightly hesitant to crack open and start the flow on each breath. It steadfastly refused to free-flow when casually dropped out of the mouth at depth. There were no adjustments to play with. It has a nice mouthpiece and felt very lightweight in the mouth. Exhaust bubbles are distributed nicely and well directed away from the eyes, but I could feel the exhaust port resting on my chin, which was slightly distracting. (<http://carbon.mares.com>)

Oceanic Alpha 8 SP5 (A-clamp); 2.2 pounds; \$280. Since we started doing these deep-water comparisons, the bottom-of-the-range Alpha second stage, combined with a piston-type first-stage, has always surprised us by performing so well. No wonder it's often been the choice for use for divers who go deeper than most. This is its latest incarnation and it begs the question: Do you need to pay more? It felt comfortable and lightweight in the mouth, and there was no creak or creep, no noise to speak of, and its second-stage is unobtrusive. General breathing comfort was good, although the air felt like it came into the mouth in a narrow cone. There was absolutely no discernable difference with two divers heaving heavily on it at 130 feet deep. When dropped from the mouth at depth, it emitted a light flow of air that stopped almost immediately. There was no Venturi adjustment. Inverted, it gave a totally dry breathe at nearly all angles. Its purge button was easy to feel for and gave a good range of airflows, depending on how hard it was pushed. The exhaust-T was very small, so exhaled bubbles were quite obtrusive and disruptive of vision when the diver was stationary. (www.oceanicworldwide.com)

John Bantin is the technical editor of DIVER magazine in the United Kingdom. For 20 years, he has used and received virtually every piece of equipment available in the U.K. and the U.S., and makes around 300 dives per year for that purpose. He is also a professional underwater photographer.

Is Diving More Eco-Friendly?

some green dive operators have succeeded, others not so much

Three years ago, we interviewed dive operators for the story called “Calculate Your Carbon Fin-Print” (October 2007 issue). At that time, it was a rising trend for divers to determine their “carbon footprint,” and a growing number of dive operators were helping them out by taking steps to reduce their carbon emissions and paying to offset their carbon footprints. Divers who paid a “carbon tax” had their money funneled to carbon offset programs that helped fund projects geared toward reducing greenhouse gases, usually by planting trees or investing in renewable energy companies.

How have those efforts gone? Let's just say the recession has been the biggest factor in putting green policies on the back burner. The good news is that while a reduction in air travel has reduced the amount of carbon emissions being produced in the skies, it also has put a big dent in dive travel, leading some dive operators to scale back on their green efforts. How about the ones we interviewed back in 2007 – are they still eco-friendly? We contacted them last month to find out.

The Liveaboard Fleet

Explorer Ventures, with five vessels, claimed to be the first “carbon neutral” liveaboard fleet back in 2007. CEO Clay McCardell said his staff analyzed how much carbon dioxide they emitted through boat diesel burned, utility bills, even employee commutes. Then they calculated what it would cost to offset those emissions, and paid that amount to NativeEnergy, a carbon-offset marketer that funds renewable energy projects. But due to the recession, Explorer Ventures dropped the carbon-offset policies two years ago because of economic realities (it forgot to take the details off its website, as the carbon-offsetting program is still listed on its website). “But we're still trying to educate people on environmental policies, like consider taking expired batteries home to the States

versus dumping them overseas on islands where they don't recycle them," says McCardell. "And we do still stock eco-friendly products on board." Even though dive operators want to be green, large vessels have a harder time, says McCardell. "There's no affordable alternative to burning fuel, and divers expect air-conditioning, compressed air and the power to charge their electronics, so we're limited based on what we can do."

We had also interviewed execs at the Aggressor Fleet (they wanted to install the most fuel-efficient engines recommended by the Environmental Protection Agency) and Peter Hughes (its Papua New Guinea liveaboard was starting to run on palm oil). Since that time, the two liveaboard fleets were bought by Wayne Brown, but neither he nor Aggressor Fleet president Wayne Hasson agreed to give us an update on their green practices.

The Dive Shop

Like other green dive shops, Ocean First Divers in Boulder, CO, added a carbon calculator to its Web site so customers could see the dollar figure on carbon credits from their dive travels. Ocean First took it further by asking divers to buy credits for their emissions to fund renewable energy programs. At that time, owner Graham Casden was debating whether credits from the shop's sponsored dive trips should be paid by customers, Ocean First, or in a 50/50 split. Now, the dive shop is not buying emission credits. "We purchased credits for our customers through 2009 and into 2010, even going as far as to offset all emissions from our dive shop operations, essentially making the business carbon neutral – but 2008 and 2009 were horrific years for the dive industry, so we had to determine where we felt our environmental investments would be best spent."

Think Twice Before Putting Your Gear in Rinse Tanks

Recreational divers typically rinse their equipment in "communal" tanks filled with fresh water after completing dives. Studies show these tanks are contaminated with bacteria, but the types of bacteria haven't been studied, nor have many studies addressed the possibility that communal rinse tanks may harbor pathogens and transmit disease. But it's proven that they do. Case in point: 14 divers at Fiji's Vitu Levu Island were diagnosed with conjunctivitis, which was traced to the eye infection of a divemaster who placed his mask in the communal tank (see our September 2008 story "Transferred by the Rinse Tank" for the story).

Michael R. Miller, a professor of biochemistry at West Virginia University, did an informal study at a Bonaire dive shop to investigate the extent to which bacteria was introduced into communal rinse tanks (see the results in our June 2009 article "Bacterial Contamination in Rinse Tanks"). Now, Miller and other West Virginia University researchers have made a more formal study, recently published in the journal *Underwater and Hyperbaric Medicine*, by testing bacteria in water samples taken from equipment and mask rinse tanks, as well as from ocean water.

During a dive trip at Belize's Ambergris Caye, they collected water samples for five days from these sources: their dive shop's hose used to fill a communal equipment rinse tank; the rinse tank itself; buckets on boats where masks were rinsed or stored; several dive sites at various depth; and ocean water at the dive shop's dock. In total, 30 samples were collected in sterile tubes and placed in a refrigerator. Back in the U.S., samples were separated and studied.

No bacteria were found in water samples from the hose used to fill the rinse tank. All samples from the equipment and mask rinse tanks contained levels of bacteria, the former containing the most diverse types. The extent to which bacteria were present in ocean water during various dives and by the dive shop dock varied greatly from low to high levels, but there was no apparent correlation with day or depth of diving.

Some of the bacteria were likely introduced by ocean water on divers' equipment, and some others may well have originated from the divers themselves. Although no bacteria in any of the samples could be considered overt human pathogens, two types of bacteria collected from open water are typically linked to water contamination, and could pose health problems to some people. Another type of seawater bacteria collected has been reported to infect wounds, and is resistant to many drugs.

From those results, the researchers show that due to the significant bacterial loads found in the communal rinse tanks, diseases could spread via the masks, regulators and other gear lying in them. To minimize the risk of infection, divers should rinse at least their masks and regulators in clean water rather than communal tanks. It's also advisable to spray or wipe masks and mouthpieces with a disinfectant, such as 70% ethanol, and give them time to dry before diving.

"Identification of Bacteria in Scuba Divers' Rinse Tanks," by Brian Washburn, Andrew Levin, Kristen Hennessy and Michael Miller; Underwater and Hyperbaric Medicine, Vol. 37, No. 4, pages 233-240.

In the meantime, Casden has focused on making his dive shop more eco-friendly. After getting a \$150,000 loan from the City of Boulder, he recently installed a solar PV system, solar thermal system for the water supply, high-efficiency boulders, a heat exchanger to circulate warm air coming off the pool back into the system to reheat the pool, eco-friendly pool lighting, and a revamp of all the duct work for improved heating and cooling,

After his cash flow improves, Casden plans to restart the carbon-offset program, and when he does, he says he'll most likely raise the price on the dive trips by the amount Ocean First is charged for the carbon credits. "We feel strongly that our customers will gladly pay an extra \$25 or so if they feel confident that the money is going to a worthy cause. It's analogous to divers paying a park fee in order to be able to dive in a marine protected area." Ocean First only does dive trips with eco-friendly operators. "We refuse to work with companies that don't address their environmental impact."

It sounds green and clean, but will it keep Ocean First Divers in business? "I have been battling with this since you wrote about us a few years ago," says Casden. "Initially, becoming an environmentally responsible operator will take an upfront investment, anywhere from a few hundred dollars to hundreds of thousands of dollars, as in our case. But the common misconception is that it is more expensive to be an environmentally conscious operator. The truth is that, in the long run, it is not only more efficient but also less expensive to be green. And although it is hard to quantify, we are definitely gaining customers through our green initiatives. We've had customers find us on the Internet based solely on our environmental practices, and we also have customers driving an hour away from Denver, past numerous other dive shops, just to do business with us."

The Green Middleman

One of the organizations helping the dive industry go green is Sustainable Travel International (STI), a carbon-offsetting middleman that is working with dive operators and shops to install carbon calculators on their Web sites and create diver-education programs. In 2007, STI president Brian Mullis told *Undercurrent* that he was seeing the dive industry starting to embrace action, but he had only talked with a fraction of the dive businesses at the time.

Now, STI has just introduced a sustainable tourism certification standard for dive tour operators. Called the Shore Excursion Standard, it's an international sustainable tourism certification program designed for tour operators serving cruise lines and dive operators. A company signs up for STI to walk them through how they're doing on factors like pollution prevention, carbon emissions, recycling and pollution control, and how they can improve and be eco-certified. Based on an environmental standard STI created for the cruise line industry, the Shore Excursion Standard is a lesser strict rating. STI hopes to convert half of the cruise industry's 6,000 shore operators into eco-responsible businesses by 2015, and has been working with PADI and SSI to encourage their dive shops to embrace and adhere to the standard.

"In the past three years, we learned we needed to create a sustainable tourism standard specifically for marine shore operators, and for dive operators that have retail shops as well as those that offer tours," Mullins says. "By creating a standard in collaboration with this sector, we have garnered a great deal of buy-in and support from cruise lines and the dive industry."

However, dive shops battling a tough recession may not be as enthusiastic as Mullins makes them out to be. The fee for the application and a one-star (out of five) eco-friendly rating is \$300, and for dive operators that want more stars, the fee for a two-day on-site assessment and logo licensing is \$1,600, plus travel rates and expenses of \$500 per day, and an additional \$800 per extra day needed to rate the site.

The Future?

Obviously, the recession is holding up the green movement in the dive industry, but the people we interviewed twice for this two-part story say it's only a matter of time before the industry has to take its head out of the ground. "Our reefs are being degraded from unsustainable fishing, warming seas, and pollution, so if the diving industry can't draw attention to the challenges we face and take steps to address them, then we're in trouble," says Mullins.

Casden, who is working with STI to get the Shore Excursions Standard adopted, says the dive industry needs fresh blood and a new outlook. “I spoke of environmental initiatives and a paradigm shift at the DEMA conference in 2009, and I still contend to this day that the collective mindset of the dive industry is an inhibitor to our progress. Change will have to stem from the top, and until PADI and SSI lead by example, we will continue down the same self-destructive path that we have been traveling for years. Changes like the Shore Excursion Standard, and an overall facelift in the mindset of the individual diver, will be the differences that save the industry.”

-- Vanessa Richardson

Legal Complications of Being Injured Abroad

why a Californian had to go to Hawaii to sue a Fiji resort

If a diver suffers an injury on a dive trip overseas and wants to sue the dive operator, it's not only hard to make the case stick, but it may cost you a fortune and end up in the twilight zone. Many dive operators require signed dive releases that contain a “choice of forum” clause, which sends litigants to courts in the countries they operate in. That clause often results in a U.S. court dismissing the lawsuit, so the only choice is to journey to the designated court – which could be Belize, Indonesia, or farther. Foreign legal systems aren't easy to maneuver through. Having to find a foreign attorney who can communicate in English and charges a reasonable fee could discourage anyone from pursuing a claim. We've discovered a recent case, yet to go to trial, which revolves around the venue in which it is to be tried.

While on a Maui vacation in June 2008, Linda Rollins visited the Maui Dreams Dive Company, where she noticed a DVD ad about Beqa Lagoon Resort. She spoke with the owners, who said they were chaperoning a trip to the resort in June 2009. Back home in California, Rollins called Maui Dreams, which referred her to a nearby travel agency, McCoy Enterprises, to book the trip. While Rollins wrote a check to McCoy, she was told the Maui Dreams owners would handle the trip details. She was later contacted by BLSS, which sent her an airplane ticket and information about the trip.

In our January 2009 issue, we reported Rollins' fingers had been severed by a free-swinging boat ladder during a shark dive at Beqa Lagoon Resort. As a fellow diver in her party reported, “When it was Linda's turn, she grabbed the ladder from the back just as the boat's stern rode up on a swell. The ladder swung down hard against the aluminum stern plate and severed two of Linda's fingers. A third finger was hanging by a flap of skin . . . The tips weren't recoverable thanks to the lampreys.”

Rollins filed a suit against Beqa Lagoon Resort and Beqa Lagoon Support Services (BLSS), the resort's U.S. reservations office. It was originally filed in San Francisco, where BLSS had it dismissed due to a lack of personal jurisdiction (the reservations office is in Nevada).

Rollins' attorney, Kevin Lancaster, decided to take a different tactic and include as defendants a Hawaiian dive shop and a travel agency that Rollins used to sign up for the Fiji dive trip. Rollins filed her case again at the U.S. District Court in Hawaii, suing Maui Dreams and McCoy along with Beqa Lagoon Resort and BLSS. The resort agent protested, saying it did not solicit business, advertise or hire employees in Hawaii, does not advertise in Hawaii, and has no employees in Hawaii.

However, Rollins successfully argued that BLSS worked with McCoy Enterprises and Maui Dreams to market and solicit business in Hawaii by providing promotional materials, pricing schedules, and commissions to the two companies, who in turn sold and marketed vacation packages to Hawaiian residents and tourists. Moreover, BLSS is the only company allowed to book U.S. clients for Beqa Lagoon Resort.

BLSS asked that Rollins' claim be filed and tried in Fiji. However, District Court Judge Helen Gillmor decided BLSS couldn't demonstrate why Hawaii wouldn't work as the forum, and why Fiji would be a better place for a trial, given the diverse location of parties in this case. (BLSS never suggested that the case be transferred to Nevada.) Rollins stated that half of the witnesses she intended to call live in Hawaii, while BLSS contended most witnesses were in Fiji. However, both parties agreed that four of the six defendants in the case live in Hawaii.

Lancaster, Rollins' attorney, tells us that now the actual Beqa Lagoon Resort has filed a motion to quash the lawsuit, which is pending. The resort's dive release has a "forum selection" clause stating that lawsuits can only be tried in Fiji courts. But Lancaster is arguing that because Fiji has had a recent spate of coups, the dictator sent the Supreme Court home, and the civil courts are essentially not working, it has no jurisdiction over the case.

What a mess.

- - *Vanessa Richardson*

Is Closing Reefs to Divers the Best Way to Protect Them?

Last year saw a severe amount of coral bleaching across the Indo-Pacific region. Thailand, with more than half its reefs affected, took extreme measures in January, making reefs in seven marine national parks off-limits to divers and snorkelers. The country's Ministry of Natural Resources and Environment stated that it's a temporary closure and "the key to stopping and reversing the situation is to immediately alleviate the environmental stress to prevent further damage to the affected reefs."

So it's divers causing the damage? Not El Nino's rising sea temperature or overall global warming? And does Thailand really think the reefs will recover by high season? We're skeptical, but decided to ask two reef conservation organizations for their points of view about whether a crackdown on diving will do anything.

Suchana Apple Chabanich, a professor of marine sciences at Chulalongkorn University in Bangkok and the coordinator for ReefCheck in Thailand, says this is probably the best method for now. "Actually, closing reefs to divers should have been done last year, right after the bleaching. Now it's a bit too late, but probably better than doing nothing. Even though Thailand has marine national parks, it has limited staff and no stringent regulation enforcement, so the reefs have been deteriorated in the past several years. We can't deny there are other factors contributing to reef damages, but tourism is one of them. Activities include discharging polluted water from boats to the reefs, sedimentation from coastal construction, and anchoring boats onto reefs. Closing the sites will allow reefs to have time to recover and allow juvenile corals to grow."

Naneng Setiasih, the Coral Reef Alliance's regional manager in the Coral Triangle, says that while closing the reefs has helped to raise public awareness about coral bleaching and climate change, there are more effective ways to address the issue. "Mass coral mortality requires decades for coral to recover. If the goal is to reduce local pressures on the coral to help them recover from bleaching, then [just] closing dive sites is not the best approach for achieving long-term results."

However, she says, closing the shallower reefs is not a bad move because they are typically exposed to snorkelers by the hundreds. "In Koh Phi Phi, for example, large boats can be seen releasing roughly 150 snorkelers at a time, many of whom have not received a proper environmental briefing. As a result, uninformed snorkelers are found standing on reefs, kicking them, and stirring up sediment, all of which can damage and kill coral."

Setiasih's alternative to site closures: "Use some of the revenue generated through marine recreation to work with marine recreation providers to promote better dive and snorkel practices to their clients. This would really help minimize local impacts to coral reefs, increase their resilience, and foster long-term protection."

What about fishing, which has also taken its toll on Indo-Pacific reefs? The Thai government is also cracking down on illegal fishing in the area, and says it will start education programs about sustainable tourism in an effort to tackle the problem. But unless we get climate change and rising sea temperatures cooled down, there's not a lot anyone can do, even divers.

Flotsam & Jetsam

A Hotel Stay that Helps Turks & Caicos Reefs. In our February Dive News e-mail (sign up to get them monthly by going to www.undercurrent.org and clicking on "Dive News"), we mentioned the launch of the Turks & Caicos Reef Fund (www.tcreef.org) to raise money for marine environmental programs in the area. You can help the fund out, and get something for yourself simultaneously, by bidding on its fund-raising raffle prize, a two-night stay at the Parrot Cay Resort. You'll get a Garden View room, breakfasts and transfers to and from the airport or Leeward Marina (stay before December 25). The prize is valued at nearly \$2,000, you can win it for \$20. Enter the raffle before April 22 by contacting DavidStone@tcreef.org, or call 649-346-3111.

That's No Muskie, It's a Diver. Ice fishermen at Lake Waconia, MN, were preparing their lines on the morning of January 15 when one of them said he saw the biggest muskie of his life pass below his fishing holes. Suddenly, a few lines took off. The fishermen began to reel in, assuming they had hooked a Moby Dick-sized muskie. Instead, they were greeted by an air bubble from the dark fathoms below, followed by a hand holding a rope. One of the fishermen had an asthma attack, but the others realized they had hooked a scuba diver. They leaped to pull the man-fish to safety, but the diver's hand gave a thumbs-up, disappeared momentarily, materialized again holding a couple of the fishermen's hooks to give them, and gave another thumbs-up before submerging. An hour later, someone knocked on the fish-house door -- it was the diver, calling to say hello. He apologized for the fact that the rope that attached him to the hole where he entered the ice to dive and look for anchors had got caught in their hooks. The fishermen never got his name, but the story they told the *Minnesota Star-Tribune* nearly made up for the loss of a record-setting muskie.

Defeat Enemy Divers by Deafening Them. Underwater terrorists, beware. A researcher at the Stevens Institute of

Technology in New Jersey has proposed a system that can blanket an underwater area with high-intensity sound directed to the diver's location, and deafening the diver in the process. Alexander Sutin found that using hydrophones to listen for a diver's breathing are easier to use than sonar, and deliver better detection rates. Once a diver has been located, a louder version of the sound picked up at each hydrophone is reproduced by an attached transducer and aimed back at the diver. The sound, a deafening 180 decibels, can be sent out over a distance of 650 feet.

Cave Diver Stays Calm to the End. Agnes Milowka, a marine archeologist and esteemed cave diver who had served as a stunt diver for James Cameron's latest movie *Sanctum*, died on February 27 while diving Tank Cave in Millicent, Australia, but dive buddies said she remained calm until her last breath as she tried to find her way to the surface. After venturing into a narrow, rocky passage, Milowka, 29, became separated from her buddy and got lost after stirring up silt. Her body was found at 65 feet depth in a tight section of the cave, where she apparently ran out of air, became disoriented and suffocated. She was 1,800 feet from the cave entrance. It took three days for cave divers to extract Milowka and bring her body to the surface.

A Diver Creates an Eco-Friendly Fishing Line. A bane to divers everywhere is fishing line strewn across reefs. But a Japanese company named Globberide has created a fishing line made of special plastic that dissolves into carbon dioxide and water after five years through the work of marine microorganisms. Tokuo Ichikawa, the man who created the fishing line, says the impetus came five years ago while he was taking part in a dive at Lake Kawaguchi to recover discarded fishing line and sinkers. The fishing line was introduced last July, and even though it was 10 percent more expensive than standard line, it quickly sold out. Ichikawa says he will now develop fishing line using natural materials such as rice and corn.

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