

undercurrent

The Private, Exclusive Guide for Serious Divers

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Dolphin Dream, The Bahamas

dolphin snorkeling for the patient and energetic

IN THIS ISSUE:

<i>Dolphin Dream, The Bahamas</i>	1
A Diving Computer Postscript	2
Invasive Lionfish Encounter Top Predator!.....	3
The Sardine Run: South Africa	6
Is the Sardine Run an Endangered Species?	7
A Sparkling South African Side Trip .8	
The Man Who Made Your Diving Safer.....	11
Why You Can Dive with 700 Sharks in Fakarava	12
Find Yourself in Deep Trouble?	14
Sherwood, You Have a Camband Problem.....	15
A Gruesome Start to A Dive Trip.....	16
Mako Shark Bite Lawsuit Makes Court Progress	17
Flower Garden Banks May be Off Limits to Divers.....	18
A Realistic Video Game Based Underwater.....	19
A Cosmetic Risk to Shark Populations	20
For Still Photography, Strobe or Video Light?	20
Lost Camera Floats 530 Miles.....	21
Diving Death Compounded by Poor Payout.....	22
Flotsam & Jetsam.....	22

www.undercurrent.org

Editorial Office:

Ben Davison, Publisher and Editor
3020 Bridgeway, Suite 102
Sausalito, CA 94965

EditorBenD@undercurrent.org

Dear Fellow Diver,

The call came at 7 p.m. The Dolphin Dream had been steaming for hours. The sun was low, and two of the guests had already cracked open beers, having given up on a dolphins interaction that day. The rest of us assembled on the dive deck, donned our fins, snorkels, and masks, ready to make our giant stride. Six Atlantic spotted dolphins swam off the stern, waiting for us to join them.

The water was a deep shade of blue, the sandy bottom only 30 feet deep. As with most of our evening encounters, the dolphins were more energetic and playful than they had been during the morning. They chased and playfully nipped at each other and at the fins of the free divers. Whenever I thought they had left, one would suddenly zoom past me, quickly followed by others. I was struck by how close they came to me without making contact. Occasionally one would burrow its beak into the sand, searching for a bottom dweller, before returning to play. It was getting dark, and from the bridge, Captain Scott indicated it was time to for us to board. We had been in the water for more than 30 minutes.

The beer drinkers should have had more confidence in the Captain's ability to locate the dolphins. Captain Wayne 'Scott' Smith has been leading dolphin charters in the Bahamas for more than 37 years. Although we swam with bottlenose dolphins, it was the friendlier Atlantic spotted dolphins that we sought.



MV Dolphin Dream



About 80 of them reside in 60 square miles of the northwestern Great Bahama Bank. They can be identified by the spotting patterns developed as they age and by scars from shark attacks and boat injuries. In a book he co-authored, "Dolphin Tales, True Stories of the Atlantic Spotted Dolphins," Captain Scott related his adventures with those he has befriended over the years. The silverback of Bahamian dolphin diving, Scott indeed has a loyal following. Most of my fellow guests -- six Americans, three Japanese, and a German -- had been on his boat several times. One woman who has been coming annually for 22 years could only recall three days when Captain Scott failed to deliver his customers to the dolphins. Riory and Zack, young and friendly deckhands, and Heidi, the chatty and skilled chef, completed the crew.

I boarded the 12-passenger Dolphin Dream on a Saturday afternoon in June at Riviera Beach Marina, just north of Palm Beach, Florida. After a perfunctory safety briefing and dinner, we departed. Scott purchased the former shrimp trawler in 2005 to replace its smaller predecessor so he could operate year-round, mostly with shark diving trips, but with some dolphin trips. It's 85-foot length and a 35-foot width assured a smooth ride.

I was given one of the six small lower deck windowless double-bunk cabins, the doorway covered only by a curtain. At 5'7", I could barely stand upright. Getting into and out of my bunk gracefully required a level of dexterity I did not possess. Each bunk has a reading light, power sockets, and vent openings, a couple of shelves for storage, and two towels per person. During the trip, the cabins were not serviced. While there was a storage area in the hallway, one bag was left blocking access to the emergency escape hatch -- not a wise idea. Two roomy communal heads, each with a shower and a basin, were kept clean, and I rarely had to wait to use one.

Opposite the galley, fitted into a wall counter, a fridge was stocked with free beer and soft drinks, and there was an ice machine. Coffee and hot water were available round the clock. The salon featured two L-shaped upholstered benches, each set around a triangular table, as well as a TV, DVD, and stereo, which no one bothered to turn on. A picnic table and a freezer top doubled as camera tables.

A Diving Computer Postscript

On reading *Calculating a Healthy Ascent* in the August issue of *Undercurrent*, Jim Reilly was prompted to write to us, raising the specter of the likelihood of pressure sensors being inaccurate. He notes that algorithms may be all very well, but if a diving computer reads a wrong depth, it can lead to problems.

Pressure sensor technology has come a long way since diving computers were first mooted. While the original computer, the EDGE, indeed had pressure sensor problems and several divers were bent using it, over two decades of testing numerous computers side-by-side for comparison purposes, I've never found this to be a problem. If a pressure sensor does fail, it's often

because the computer has not been rinsed effectively in fresh, clean water after use. Depth sensors can be obstructed by salt crystals. Those who change the batteries themselves can overlook this.

When a dive store changes the battery of a diving computer, they check it afterwards in a test pressure chamber, both to check for leaks and to observe that the computer depth reading conforms to the calibrated depth gauge of the pressure pot. If it does not, the depth sensor might respond to cleaning or it might need replacing.

—John Bantin

Steps led down to the dive platform, almost at the water line, and a well-designed ladder allowed easy ascent from the water even without removing fins. On the opposite side of the stern deck, stairs led up to the large, partly covered sun deck. Smokers used the small stern deck.

After breakfast on our second day at sea, we steamed from our anchored location, soon encountering dolphins, seven of which lined up on the surface off the stern, waiting for us. Four expert freedivers, one a former Japanese champion, executed deep spins and loops, captivating the dolphins for minutes on a single breath of air, lengthening our interactions. When necessary, Riory, aboard an underwa-

Invasive Lionfish Encounter Top Predator

Lionfish have already unleashed their fury on ecosystems in the Atlantic and Caribbean and despite all efforts to eradicate this non-endemic species, they continue to thrive.

Staff at dive resorts work hard, hunting them down.

One man has removed more than 700 lionfish from Florida's waters in the first two months since May. David Garrett of Ormond Beach has risen to the top of the ranks since the Florida Wildlife Commission implemented the Lionfish Challenge. At the time of writing 42 divers had removed more than 6,300 fish. Garrett has established a non-profit Lionfish Eliminators to help raise money to pay fishermen to remove the harmful fish.

Elsewhere, divers keeping less precise score-sheets reckon they've removed a lot more than that from dive sites. For example, in Caribbean Grenada, Peter Seupel of Aquanauts reckons his total count alone is nearer 7000!

A brighter note is that the fillets of this otherwise venomous fish are very tasty and proving a popular choice at Caribbean meal tables.

However these beautiful, highly venomous predators are now set to tear the Mediterranean apart. In a paper published in *Marine Biodiversity Records*, researchers report that lionfish have colonized the shoreline of one eastern Mediterranean island in just a single year.

"Until now, few sightings of the alien lionfish *Pterois miles* have been reported in the Mediterranean, and it was questionable whether the species could invade this region like it has in the [sub-tropical] western Atlantic." Demetris Kletou, co-author of the paper, said: "But

we've found that lionfish have recently increased in abundance, and within a year have colonized almost the entire southeastern coast of Cyprus, assisted by sea surface warming."

How has this happened? Well, those aquarium owners

who might have set the lionfish free in the '80s in the U.S. are not to blame. Apparently, the expansion of the Suez Canal has given the fish access to the Mediterranean, and warming sea temperatures have provided the acceptable environment for them – yet another downside of climate change. There are no known predators of lionfish in the Med, so let's hope they become a popular part of the famous Cypriot meza, that meal consisting of endless small plates of tidbits, mainly seafood.

That's what Edible Invaders, a small business in Florida, is trying to convince American consumers to do.

The three-year-old company is located in Pensacola, a popular waterfront getaway on the Florida Panhandle whose reefs have been overrun by lionfish in recent years.

Clara Proctor, Edible Invader's day-to-day operations manager admits that it's a challenge to get local residents to eat sustainably. "We make it easy," she says. "Preparation is not going to involve the consumer in any way: We harvest the fish. We make something ready to eat. We put it in the grocery store. All you have to do is open a lid, and you're part of the solution."

"I don't foresee lionfish ever being out of our waters," Proctor says, but she believes that by eating lionfish and its products, the population can be controlled, cleaning the waters of a dangerous predator.

– John Bantin



Dolphin Dream

Snorkeling	★★★★
Diving (Don't go for the diving!)	★★
Accommodations	★★★
Food	★★★★★
Service and attitude.....	★★★★★
Money's Worth	★★★★★

★ = poor ★★★★★ = excellent
Caribbean scale

ter scooter, steered the dolphins back. He would shoot down to the bottom, then spiral upward, often drawing one or more dolphins with him. When the dolphins swam too far to follow, Scott maneuvered the boat toward us and cut the engine so we could climb back. Occasionally Riory used his scooter to ferry an exhausted snorkeler back to the boat.

Once snorkelers were onboard, the Dolphin Dream would catch up with the dolphins, and we would jump in again to interact for a few minutes to half an hour, depending upon the dolphins' interest. Juveniles were more curious and playful, so if they were present, the encounters were longer. The morning encounters

tailed off by 11 a.m., when the dolphins would simply swim on. Like other cetaceans, dolphins rest by shutting off half their brain while keeping one eye open as they swim. This is their sleep time and lasts between mid-morning and early evening, when they again displayed renewed interest in us.

Initially, I was content to surface snorkel and enjoy the action from above, watching the experienced freedivers assist the scooter diver to entertain the dolphins. As the week progressed, I started freediving, eventually reaching a depth of 30 feet, where I got a better perspective, and my swimming with the dolphins helped keep them around.

Given the long, dolphinless afternoons, on three of our five days, the Captain anchored at a reef, where after lunch we could scuba dive, using their BCs and regulators. One day we steamed down to Bimini Road. This shallow site, named for large flat stones that look like a road from above, sported soft brown coral and typical Caribbean reef fish, including sergeant majors and a small school of pinfish. A few lobsters hid under the stones. At a maximum 10-foot depth, it was a relaxing, though unspectacular dive. Another day, we stopped at Eldorado Shoal, where I followed Zack as he speared lionfish. The sight of seven lionfish skewered on Zack's speargun emboldened a small reef shark that took a few bites. Three other sharks, one significantly larger, kept an eye on us. Feeling exposed without a wetsuit and concerned about the possible arrival of an even larger predator, I headed back to the boat. Zack had the same idea and followed me with his fish kebab, the reef sharks in pursuit.

Other than diving, afternoons meant socializing, napping, reading, or otherwise entertaining oneself. A few customers practiced yoga on the sundeck. Given my awkward mobility in the tight cabin, I should have joined them. While I could always find a quiet spot, I enjoyed gabbing with the interesting guests, whose professional and educational backgrounds were varied, but they were united by a passion for dolphins. A large complement of women guests made for a polite and less competitive atmosphere. "This feels like a friends-and-family trip," I commented to Captain Scott. "That's not a bad thing, right?" he chuckled.

One night we motored to the deep straits west of the Great Bahama Bank, where the dolphins hunt. The boat gently drifted, its powerful lights directed off the stern attracting small crustaceans. Soon they were being hunted by flying fish and squid. Sharks and dolphins followed. And we, too, joined the underwater melee, watching the dolphins prove to be much more adept hunters than sharks.

What the boat lacked regarding creature comforts, it made up with the abundance and quality of its galley offerings. After 7 a.m., we could help ourselves to cereals, bakery items, yogurts, fresh fruit, eggs sunny-side-up, or scrambled, sausages, delicious bacon rashers. Heidi once brewed me an espresso, but I found the filtered coffee more than decent. For the Japanese guests, she boiled rice and offered six

choices of seasoning. Lunch was once a variety of pasta and cold ramen noodles with garnishes. Another day, she prepared sushi and sashimi using hogfish speared by the deckhands. All meals were buffet, but she cheerfully customized dishes. Did I want my quesadillas spicy or not? With chicken or with vegetables? With or without refried beans? Avocado, cilantro, and olives were offered as garnishes.

For dinner one evening we had roast beef, crispy and caramelized on the outside, pink and juicy on the inside, accompanied by deliciously seasoned roast vegetables. Her barbecue pork ribs cooked in Coke were so tender that the meat fell off the bone. Sirloins, perfectly broiled, came with fresh lobster tails. She also prepared thyme-roasted chicken thighs and baked salmon. The vegetarians had a different tofu-based course option every evening. For lunch or dinner, there were a variety of salads and desserts including store-purchased key lime pie, Belgian eclairs, chocolate cake, and ice cream. Between meals, there was a huge selection of snacks, healthy and decidedly not, as well as lots of fresh fruit -- nectarines, watermelon, oranges, or melons. A crudité platter with a dip made an appearance every afternoon.

Heidi was a keen snorkeler, too. One evening, at the end of an intense dolphin encounter, she was gushing, overwhelmed by her experience. "Put the snorkel back in your mouth or else you will drown," quipped one of the regulars.

In my years of diving, I would sometimes see dolphins swimming in the distance during a safety stop. Other times I would jump into the water with my snorkel if we happened upon them on the way back from a dive. Normally they would be in their sleep state and swim on. Twice, off the Pacific islands of Mexico and Costa Rica, I had memorable encounters with hunting dolphins, but many interactions on this trip were longer and more intense. But, while we had morning and late afternoon encounters every day, there was a lot of down time and lots of motoring. There was no way of knowing how long the dolphins would hang around each time you went in. It required determination and energy to repeatedly jump in, swim back, climb aboard, and jump in again, let alone entertain the dolphins, because if they weren't entertained they didn't stick around. "Many divers say it's too much work," said one of the regulars who once worked on the boat and now returns as a customer every year. Nevertheless, he finds the dolphin charters more rewarding than the shark trips. And I surely agree.

-- DTV

Our undercover diver's bio: DTV has been lucky to dive since 2001, mostly in the Indo-Pacific: Solomon Islands, Indonesia, Philippines, Palau, Chuuk, and the Maldives. He has also dived at the Cocos and Malpelo Islands, the Galapagos, French Polynesia, the Red Sea, the Mediterranean, the UK, and the Azores. He swam with humpback whales in Rurutu and with Orcas in Norway. He doesn't bother with a camera, preferring to capture memories in his mind's eye.



Divers Compass: Six nights, \$2195. www.dolphindreamteam.com.

Dolphin Dream operates dolphin charters between May and August and shark trips year-round. Not all trips are advertised on the website, so inquire. . . . Captain Scott's answers to my emails were delayed when he was out at sea. . . . There is no additional cost for scuba diving, and no charge for using a BC and regulator, and Scott loaned me a wetsuit for the night dive. . . . The Riviera Beach Marina is a short taxi ride from the Mangonia Park Tri-Rail Station, which offers connections to Miami International Airport, Ft. Lauderdale Airport and Palm Beach. . . . Soft drinks, Coors Light/Budweiser Light, and Yuengling were complimentary. For anything stronger -- or better beer -- stock up in Walgreens or Publix before you set off. . . . We sometimes saw another Bimini-based liveaboard occasionally dragging the customers on a rope off the stern to view dolphins -- not the sort of interaction Captain Scott is likely to offer.

The Sardine Run: South Africa

the best ten minutes you'll ever spend in the water

Dear Fellow Diver,

As the boat sped toward the gannets flying overhead, our skipper, Mike, reminded us that we needed to be ready to go when we arrived at the spot. I put on my mask, fins, and weight belt, and when I heard "Go!" I was already sliding into the sea. Suddenly the action was all around me. A dozen dolphins sliced the water from every direction. As I looked down, two seven-foot dusky sharks ascended from the depths. In front of me, a gannet hit the water and disappeared. And then, as quickly as it had happened, the action moved on, and I was left looking at a lot of tiny fish scales sparkling in the water -- all that remained of the anchovies that had been there a minute ago. This was my third day on the Sardine Run, and all the endless motoring on the open sea that I had been doing for nearly three days was forgotten in a couple of minutes of ultimate fish frenzy.

That day had started like the previous two -- up for breakfast at 5 A.M. and then in the van for the 40-minute drive from Cinsta, where we were staying, to the East London Harbor, where our boat was moored. I would don my 5mm wetsuit, zipping it above my waist, and then arrange the four layers of clothing over my torso (T-shirt, long-sleeved cotton shirt, fleece, and waterproof) so that the layers under the waterproof wouldn't get wet (this had been a problem the first day -- one I didn't want to repeat.) Then I'd help cart the gear from our storage space in the funky yacht club down to the boat at the dock. We'd leave the harbor by 6:45 A.M., in time to watch the sun rise over the Indian Ocean. There were seven of us on the boat -- Mike Nortjie, the owner of Pisces Divers, his mate, Jan de Bruyn, and five divers -- a South African couple, a Belgian, a Frenchman, and me. Mike and Jan had spent the previous week with eight divers from the Czech Republic, and they reported that the action had been good -- one day they had spent 30 minutes in the water with a "relaxed" humpback whale, and they had several good encounters with the baitfish, birds, and dolphins.

This was welcome news -- I love viewing mammals, birds, and fish. I not only keep a log of fish that I see, but also I have lists of birds and mammals I've seen on the six continents I've visited. I know that nothing in nature is promised, but having read and seen videos about the Run, and now hearing about the previous week's success -- well, it was mid-June and I was ready.

The Sardine Run actually includes five types of baitfish: sardines (South Africa pilchards), red-eye (another type of sardine), garfish (walla walla), anchovies, and mackerel. The baitfish spawn in the cold water about 150 miles off the southernmost tip of Africa in May and then swim northeast toward the warmer water of the Indian Ocean. By June, they are close to the coast and begin attracting predators.

Up to 18,000 common dolphins are attracted by the Sardine Run -- not to mention sharks (including



On the Look Out for Action



silkies, bronze whalers, ragged-tooths, and bull sharks), several species of whales (including Bryde's and orcas), and lots of birds (including gannets, albatrosses, terns, and skuas). As documented in the 2001 BBC documentary The Blue Planet and the 2008 IMAX film Wild Ocean, huge schools of dolphins herd sardines into baitballs up to ten meters in diameter. The dolphins cut through them, sharks join the feast, gannets hit the ball from above, and the grand finale -- a Bryde's whale comes up from the bottom and swallows the entire ball.

But for an observer, reality is different -- this event occurs over hundreds of miles along the South African coast, and the fish can be hard to find. When you do find the baitfish, you need the dolphins to come and herd them into baitballs. And when this happens, the baitballs rarely last for more than ten minutes.

Mostly what happens is that the boat travels along the coast looking for diving birds that signal the presence of baitfish. Our boat was an eight-meters Superduck with two 90HP Honda four-stroke engines, so we covered a lot of ocean in a 6- to 10-hour day. But it was a basic boat -- no seats or benches, no head, and no overhead for shade. Most of the boats -- about 20 of them -- that follow the Sardine Run are based in Port St. John's, a small town about 350 kilometers to the northeast. I had opted to stay in East London, where only two operations are

Is the Sardine Run an Endangered Species?

The Sardine Run was first noted in 1853, but it took 150 years for it to become famous internationally. About that time, in 2003, Dr. Allan Connell warned that South Africa was in danger of losing the Run altogether because of overfishing.

This warning has been echoed by other experts, most recently by Mark Addison, who helped to pioneer the tourist industry that has grown up around the Run. At a talk he gave this past April, Addison called sardines "the butter of the sea" and noted that if we lose the sardines, many species that depend on sardines will also be impacted.

That the Run has had some off years recently has been well documented — for instance, local South Africans have for years, gone down to the sea with nets and baskets during the Sardine Run and scooped up the fish from shore. (Think of the grunion run in Southern California.) For the first time since records have been kept, there were no reports of netted fish on beaches in 2013 and 2014.

But the fish returned last year. In a recent article in the *African Journal of Marine Science*, Pierre Fréon and his colleagues have offered another explanation for the recent decline in sardine sightings. They argue that increasing water temperatures might be altering fish behavior. Sardines are being driven deeper and further offshore due to warmer inshore water temperatures.

Mike Nortje of Pisces Divers agrees that overfishing is a major problem, but he also stresses that the iconic films that depict the Sardine Run were shot over several years (as were some of the most-watched videos on YouTube). He points out that while baitballs are definitely rarer than they have been in the past, there are still lots of baitfish in the water, and they regularly attract all of the large predators associated with the Run.

His view? For people who want to do a week on the water, "It's really a case of expectation management."

A Sparkling South African Side Trip: \$16,000

If the Sardine Run leaves you with some cash to spare (well, rather a lot of cash, actually!), what about a dive trip organized by Cape Town's Ellerman House Hotel?

For a mere ZAR 215,000 (around \$16,000) per person, you can book on a luxury underwater diamond safari with two nights at the boutique hotel in Cape Town, the adventure starting with a limo ride and a private charter flight to Port Nolloth on South Africa's mineral-rich west coast, to make a dive with Benguela's divemasters, who collect precious seabed gravel. This is then 'jigged' on board the boat to separate the heavier gemstones such as garnets, olivines and diamonds,

from the gravel. After a gourmet lunch cooked on the terrace at a private villa, guests then have the opportunity to learn about grading diamonds and select a rough diamond to be cut, polished and set into a piece of jewelry at Benguela Diamond's design studio in Stellenbosch. The trip includes a Dom Perignon experience after flying back to Cape Town, but the cost of any diamonds and jewelry made for you is not included. The trip is available for a maximum number of six guests, with a single dive included, but it's weather-dependent. We're unsure if there is a refund if the dive is canceled! www.ellerman.co.za/blog/benguela-diamond-safari

based, because previously I had been diving with Pisces Divers in Cape Town and liked their operation. Furthermore, unlike Port St. Johns, where small boats can encounter big surf leaving the harbor, the East London harbor is sheltered, and transferring into the open ocean is generally easy.

The first two days on the water were slow, but the sea was rough -- luckily, my seasickness was mild compared to that of several others on the boat. After almost seven hours on the water, we had seen lots of seabirds, some dolphins, and humpbacks in the distance. But no sardines. I felt better the second day, but still no significant sardine action. We saw 40- to 50-foot humpbacks several times, but each time we approached, they disappeared. In the afternoon, Mike suggested a scuba dive to see seven gill sharks. No one had been in the water yet, and so most of us were eager to dive, but we had been on the water since before sunrise, and I sensed the others were cold and tired, too. But all of a sudden, we dropped the discussion as the boat was surrounded by common dolphins. And not just the boat -- they were everywhere. Mike estimated there were 700-800 dolphins across a 2-kilometer swath of water. In the distance, humpbacks were breaching.

We stayed with the dolphins for 40 minutes, and then Mike maneuvered the boat parallel to a humpback whale, 20 yards away. Suddenly the whale turned and swam just below the surface of the water straight toward the boat, bumping the underside -- hard -- then emerging on the other side. I could see barnacles in the water dislodged from the whale's back when it scraped the boat. Things were looking up.

Day three started slow again, and once more, Mike suggested an afternoon scuba dive at a small, rocky shoal called Three Sisters, where tropical and temperate meet -- a good place to see a wide range of species. Most of the underwater fauna in the northwestern Indian Ocean were new to me -- corals, plants, and fish. Since his wife sat out the dive, the other South African diver went in solo with his camera. The two other guys were paired, and I paired with Mike. (Unlike the South African, with his serious underwater camera, the rest of us had GoPros.) Visibility wasn't great -- 15 to 20 feet. At the beginning of the dive, I recognized a guitarfish on the bottom, and a butterfly fish -- a double-sash butterfly fish, the South Africa diver told me later. Most of the fish I saw -- the strepie (which means "small stripe" in Afrikaans), the black musselcracker, the red Roman -- were new to me.

When one of the other two buddies ran short of air, Mike took him to the surface, pairing me with the other buddy; about 15 minutes later, we surfaced, and

Jan quickly picked us up. Getting out was strenuous, since there is no ladder, but Jan grabbed me as I lunged up the side, and he unceremoniously dumped me in the bottom of the boat. This would be our only dive of the week.

By now, it was late afternoon, but Jan noticed some gannet action about a mile away. Mike moved the boat into position, and that's when everything came together -- sardines, dolphins, sharks, and gannets in a frenzy. It was the best ten minutes I've ever spent in the water. We didn't get back to the resort until well after dark, but all of us were still running on adrenaline after the day's encounter.

Buccaneer's, where I stayed, calls itself a backpackers' hotel, and while it does feature budget accommodation, it has a wide range of rooms. Sal, the manager, had set me up in one of the two newer units, with enough room for a king bed, a comfortable sofa, a table and two chairs; it had a large deck with beach chairs overlooking the Indian Ocean. The décor was pleasing, with original contemporary paintings. The bathroom had a good shower, and Internet access was available in the reception area for a small fee.

The food, part of the package at Buccaneer's, was simple but satisfying, and the group meals were sociable. Each night Sal orchestrates a themed meal that's served buffet-style -- curry night, Mexican night (better than I had expected), spaghetti night. The best dinner was a braai (a South African barbecue) that included steak, chicken, and a local sausage. Breakfast included cereals, yogurts, toast, and a fresh fruit salad, as well as bacon, grilled tomatoes, baked beans, and eggs. Each morning Sal prepared a packed lunch -- sandwiches, sausages, fruit, cookies, chips and crackers. One day she made a "healthy lunch" -- dips and raw vegetables, which most people thought was the best lunch, but one carnivore detested.

One of my biggest regrets was that I didn't spend more time at Buccaneer's. Perched on a hillside overlooking a lagoon with the Indian Ocean beyond that, the resort's grounds are lush and extensive. Buccaneer's offers a range of activities, including surfing, ATV driving, yoga and massages. My wife, who doesn't dive (and wasn't even interested in going on the boat -- an option for nondivers -- once she learned it didn't have a head), rode horses on the beach. Pisces schedules a rest day midweek, so we visited a nearby game reserve with a breeding program for rare white lions, then went to a local brewpub for lunch and a tour, finishing the day with a hike on a headland at a beautiful beach town.

When we returned to the water after our day off, we ran south for a few hours, until Jan spotted gannets, and soon there were dolphins along side of us. I got into my snorkel gear and grabbed my GoPro, and when I slid into the water and looked down, there were dolphins everywhere in the best viz we had all week -- between 40 and 50 feet. Smalls schools of 20 or so garfish were spread out so there was little chance of them balling up. The dolphins were constantly moving, locating the small schools, and then quickly devouring them. I settled into a routine for the next couple of hours; I would spend 5-10 minutes in the water with the dolphins, and when they would move on, the boat would pick me up, motor for a few minutes, and dump me right back in the middle of another pod. I slept very well that night.



The View from Buccaneer's

The next day was quiet again -- several people had napped on the floor of the boat. In the late afternoon, as we were getting ready to call it a day, we spotted birds a mile-and-a-half away. When the boat arrived, I saw lots of sardines in the water -- and lots of gannets and terns working them -- but no dolphins. I got some excellent bird photos -- including the Belgian hand-feeding crackers to a brown skua that was flying alongside the boat at about 15 knots.

On my last day, I was hoping for more action. When the boat left the harbor, humpbacks quickly became the order of the day -- I probably saw close to 20. After a couple of hours, we finally found a whale that was relaxed enough for us to get close. Once in the water, I swam as fast as I could, but no whale. After another minute, I heard the whale exhale behind me -- close -- and I saw it just as it went down nearby. I swam as fast as I could again, but the whale was gone. We had several other close encounters with whales, but each time I went into the water, the whale had disappeared. Time was running out. A group of three whales -- what appeared to be two adults, each more than 40 feet long, and a young one, about half the size of the adults -- allowed us to approach. When I kicked, they crossed right in front of me. Again, the experience lasted less than a minute, but it was electric -- like having a school bus swim by me underwater. Later, when I looked at my GoPro footage, I was disappointed to see how murky the images appeared. In my mind, though, the picture was perfect.

So would I do the Sardine Run again? Mike admitted that compared to the week before, my week had been slow (and I learned from him later, when he wrote to the group about a Dropbox for photographs, that the two weeks after us were also very good, an assessment confirmed by the photos I saw). The South African diver aboard had been coming every year for six years, and had already booked for next year, as had the Czechs from the week before. Mike and Jan are first-rate guides, excellent divers, and they are always in good spirits. When everything comes together, as it did that third day, the experience is overwhelming.

But it's a long way to go, and the days on the open boat are challenging. It's a bit like being in a combat zone -- long hours of waiting punctuated by brief bursts of intense adrenaline. It's definitely not for you if your idea of diving is a liveaboard with a hot tub and a five-star chef. But I loved the experience. However, with so many unvisited dives sites, the odds are long that I would do this one again.

-- UCD

Our undercover diver's bio: UCD says, "I took up diving and horse riding in my 40s (midlife crisis?), almost 20 years ago, and since then I've done almost 300 dives. I've been leading trips to South Africa for university students since 2003, each one culminating in a week-long safari. I have traveled extensively in Southern Africa, viewing animals on foot, from safari vehicles, even on horseback. I've been diving in False Bay to see sevengill sharks, and I've been to Gansbaai to see great white sharks -- from a cage."



Divers Compass: Pisces Divers charges about \$1400 (21,000 rand) for its one-week Sardine Run trip, which includes five days on the water (though generally you will be offered a half-day on the last day if you haven't already had your fill), accommodation at Buccaneer's, three meals a day, as well as activities on the scheduled rest day. . . . Tanks and weights are included in the price, but no other gear, and you can rent your gear from Pisces (something I should have done, since I only used my diving gear once). . . . Generally, Pisces runs 4-5 one-week trips between early June and mid-July (www.piscesdivers.co.za) . . . Flying to South Africa is not only an ordeal, but it can be expensive, with connections through either Europe or Dubai. I paid \$1650 for my round-trip on United, considerably less than the \$2,400 I paid three years ago. You can fly into either Cape Town or

Johannesburg, where several South Africa airlines connect to East London (between \$100 and \$200 for a round-trip ticket). Most carriers will allow you to arrive at Cape Town and depart from Johannesburg, or vice versa, at no extra charge . . . Consider adding a visit to Cape Town, as well as a safari in either Kruger National Park or one of the private reserves in the Eastern Cape, such as Shamwari Game Reserve or Addo Elephant National Park, where it's easier to see wildlife than it is in Kruger. . . .Jo'burg is a good place for a naïve tourist to get robbed.

* * * *

We normally don't run two-piece on the same destination, but traveling to the Sardine Run, which is on the bucket list of many divers, is long and expensive. So, we want you to know that the snorkeling trips are uncomfortable and often unproductive, as one of our long-term travel writers discovered. Still, if it comes together, it can be a thrill of a lifetime.

–Ben

Dear Fellow Diver,

Our RIB was stationed directly in the path of the oncoming humpback. We could see the small dorsal fin as it undulated toward us. A foaming tail slap brought shouts from the assembled snorkelers onboard. Then the great head rose from the sea, the spume from its exhalation forming a rainbow in the South African sun. It was heading right for us.

"Well, call me Ishmael," I thought. What if this thing comes up underneath us?

The Man Who Made Your Diving Safer

Not many divers these days are aware of what Dick Rutkowski did for sport diving, but he's given you a safety factor that just didn't exist three decades ago.

Back then, Florida Keys dive operators were talking about sinking wrecks in 130 feet of water, and Dick thought that to breathe air at that depth was a mistake. Having just retired from a career in government diving, which included research with Morgan Wells into using oxygen-enriched air by research divers, he proposed that these Florida divers breathe what we now know as nitrox. He said that, in fact, all sport divers could add safety to their diving by reducing the proportion of nitrogen they inhaled and absorbed.

The diving community castigated him, often brutally, for his efforts. Bill Gleeson, the editor of the then-all-powerful *Skin Diver Magazine*, called it "devil gas" and swore in print that he would never use it.

Undeterred, Rutkowski launched the first recreational nitrox certification course in his former Hyperbarics International base at Ocean Divers in Key Largo. It was the first of its kind. However, the antagonism toward him and his idea continued, and in 1991, the DEMA show, the world's most important dive-business exhibition, rejected an application by Rutkowski's

International Association of Nitrox and Technical Divers (IANTD) to enter a booth, citing "safety issues" regarding the use of nitrox. Ill-informed? Yes, but they were also protecting the industry from newcomers.

However, Rutkowski's resilience in the face of resistance paid off, and today nearly all of us sport divers prefer to breathe nitrox for sport diving depths if we have the choice.

In 2012, the same DEMA that had spurned him two decades earlier inducted him into its Diving Hall of Fame. It wasn't Rutkowski's first honor. He already had a glacier named after him in Antarctica.

Today, enthusiastic divers still beat a path to his door in Key Largo, to spend time with the icon of modern-day diving and enlist in his diving medicine certification and clinical hyperbaric medicine classes. He's kept all the press cuttings from back in the day and proudly shows them, saying, "Science always beats bullshit!"

And it does, and he has been vindicated. After 31 years, a change of ownership of Ocean Divers meant that Dick Rutkowski has moved his business to US1 median mile marker 98.8, Key Largo, (FL). www.hyperbaricsinternational.com

Why You Can Dive with 700 Sharks in Fakarava

Those of you who have ridden the current into the lagoon of Fakarava in the Tua Motu of French Polynesia will have marveled at the huge number of gray reef sharks that aggregate there — up to 700 at one time. But, where are there enough prey fish to feed so many?

Turns out, they survive year-long by feasting every winter on the huge number of grouper that swim into the channel to spawn.

A study published in the journal *Current Biology* says it is an example of an 'inverted trophic food pyramid,' with the average biomass skewed towards predators rather than prey. This seasonal meal delivery of spawning groupers into the southern pass sustains the extraordinary concentration of gray reef sharks, the highest

density of the species ever recorded.

Dr. Johann Mourier of Macquarie University in Sydney says, "We went there to study groupers because we heard about these spawning aggregations happening every year. [Then] we found this huge population of sharks, about three times higher in density than found in any other reef, worldwide."

The channel is just 300 feet wide by 100 feet deep but the winter peak coincided with the spawning grouper, up to 17,000 fish at a time, from habitats as far away as 30 miles.

Instead of having to forage outside the area, the sharks simply stay at the reef and save their energy, taking aggressive advantage of this convenient meal delivery system, their very own room service.

No need to worry. A hundred feet out the whale dived deep, then swam beneath the boat and carried on in search of more sardines. I hope it found some, because in two days in Coffee Bay, Kwa Zulu Natal, we had seen no bait balls, no sardines, no billfish, and no sharks.

We were snorkeling (note -- not diving) with AfriDive, an operation with two sites on South Africa's wild coast on the Indian Ocean. The reef diving operation is run out of Shelly Beach and runs to the Protea Banks less than five miles off the coast, running 90 to 130 feet deep. It is a rich tuna habitat and host to many shark species, including copper, bull, tiger, sand tiger, black tips, scalloped hammerheads and the top of the pyramid, great whites. AfriDive can accommodate rebreather divers for what they call "Diving Protea Banks in Total Silence -- the Ultimate Shark Adventure."

But we were in Coffee Bay for the Sardine Run, and diving was only offered to those who insisted on it. We had been urged to limit ourselves to snorkeling, as the action occurs near the surface and there was little to be gained by diving beneath the expected bait balls. So we checked into the windswept and aging Ocean View Hotel on a cliff above the bay and loaded our brand-new 7mm wetsuits and warm cover-ups into mesh bags for the morning trip. After declining the large breakfast buffet (we could see the white caps), we hopped into an aging safari truck for a jarring trip to the inlet where the RIBs were stationed. The 27-foot Avatar had a center tank rack that held the gear from the four guests who had insisted on scuba (but it was never used), and dive bags from the rest of us, a congenial group of Swedes, Germans, and us two Yanks. After loading up, we pushed the boat off the rocky shore and clambered aboard, sitting on the edge of the boat and holding onto one of the two lines on the buoyancy tubes. Dive master Josh fired up the twin 85 HP Yamahas, and captain Spike directed us into the oncoming surf, timing his entry to keep us all onboard when we slammed into the waves.

The trip was planned for six hours, but could go longer if the action was hot. We motored out about a quarter-mile from shore and powered down, sitting in three-foot seas, watching for flocks of gannets hovering over bait balls or pods of dolphins herding the sardines into movable feasts. Nothing happening. After an hour or so, a couple dozen dolphins swam alongside the boat and leapt up to look at the strange rubber-clad amphibians. Spike powered up and we shot ahead of the pod, stopping about 200 yards from the leaders while we got our masks and fins

on and on command, back rolled into the 68-degree water.

Visibility was about 20 feet. The dolphins caught up with us, smiled as if we were the butt of some cosmic joke, and zipped off. We hauled ourselves back onto the boat by the lines, falling to the deck in a tangle of legs and fins. Spike zoomed further seaward, passed the leaping bottle-noses, and positioned us in their path. The pod caught up to us, we had a frantic two minutes chasing groups of three or four individuals, and they were gone.

We sat on the water in the uncovered boat for another two hours before we headed farther out to sea to look for whales. The sea was rolling in 6- to 8-foot swells. The sun, sea, and jet lag were taking their toll on my buddy, who lay on the deck and rested her head on a tube, watching the shore and trying to keep the previous night's dinner firmly anchored.

And the whales showed up, about a dozen humpbacks lancing through the dark blue water. Since there were no sardines, the whales weren't stopping, and the crew decided they were moving too fast for us to get in the water with them. Then lunch was served. The Europeans hungrily dug into the ham and cheese, roast beef, and lord help us, tuna sandwiches while my buddy looked the other way.

After another hour of motoring to and fro while even the sea birds looked bored, we headed in. The tide was now out, and while the ladies waded to shore, the gents pulled and pushed the boat onto the trailer, sweating in our neoprene cocoons.

The next day was a repeat of the same. Although the sea was flat in the morning, the wind came up and the water soon heaved in 8- to 10-foot peaks, and again the sardines did not show. AfriDive sent up its microlight spotter plane, which flew 50 miles north, east, and south and encountered no bait balls. At this point, my buddy was done with the Run, and we scheduled ourselves out the following day to begin our safari early.

This is the Owner's log for that day, which, of course, we missed.

"Day of the Sardines. For over two hours, our guests of two boats were in the water with sardines. . . . Sardines everywhere. It didn't matter which direction one looked or swam. . . . Spike saw a bull shark he reckons was the size of the boat. . . . Besides the bull shark, they had dusky, bronze whaler and black tip sharks. . . . Dolphins again in silly numbers and even the elusive gannets made an appearance. . . . Most sardine bait balls the gannets missed this year. So it is a welcome sight to see these talented hunters dive bombing and shortly afterwards resurfacing with a sardine in their beak. Two hours nonstop is a long time..."

So there you have it. If you're going to do the Run, you need patience and a strong gut.

The Sardine Run (UCD)

Snorkeling★★★★
Diving★★
Accommodations★★★★★
Service and attitude.....★★★★★
Money's Worth....._★★★★½

The Sardine Run (IN)

Snorkeling★★
Accommodations★★★
Food.....★★★
Service and attitude.....★★★★★
Money's Worth_★★

★ = poor ★★★★★ = excellent

World scale

Our undercover diver's bio: IN got his Open Water certification in New York in 1987, having failed a resort course in Jamaica due to a misunderstanding about the local flora. He added C-cards in Advanced OW, Rescue, Oxygen Management, Advanced EANx, while traveling to Caribbean, Mexico, Egypt, Hawaii, PNG, Australia, Bikini, and Fiji, where he had his appendix out after a memorable 12 hour trip from Taveuni to Nadi on New Year's Day 1988. He has dived the 200 foot deep Windjammer wreck in Bonaire on air six times, earning him the nickname "Old Twitchy."



DIVERS COMPASS - AfriDive's prices for the 2017 Run are 5 nights at the Ocean View Hotel (breakfast and dinner), 4 days on the boat with sandwiches, fruit, cookies, chocolate, fruit juice and water, air support by microlight plane, for 27,500 Rand, about \$2,035 dollars per person. www.Afridive.comThe Ocean View Hotel is..adequate. The rooms have an ocean view close to a cliff edge. Beds are a bit soft, a tile floor with thin throw rugs, bedside tables with lamps, a small TV, no Wi-Fi, a safe, and a bathroom that is..adequate unless you count the shower curtain being so short

the room floods whenever you shower and you have to jiggle the handle every time you flush. . . . I highly recommend our travel agent, Above and Beyond Holidays, especially if you want to add a safari trip to your vacation. www.aboveandbeyond-holidays.com.au.

Find Yourself in Deep Trouble?

don't count on your dive guide to bail you out

It was a perfect day. The sun glistened off the deep blue sea as the dive boat, loaded with divers chatting enthusiastically, skipped across the calm surface. Meanwhile, the skipper wondered if his charges were all up to the task ahead of them — simply, to go underwater, have a good time and come back safely.

The safety scenario is one that anyone running a

It is the responsibility of any company to ensure that customers are kept out of harm's way.

scuba diving business is familiar with. If a customer gets hurt, or worse, it's a disaster for the business and may end up in personal ruin for the proprietor — and, depending upon the country they work in, even time in jail. That said, at the moment the divers enter the water, their safety is delegated to the hired help, the dive guides. Are they up to the job?

Often, these are young people with little practical experience for when things go wrong. They may have delivered explicit dive briefings — depth limits, no-stop diving limits, buddy separation procedures, air reserves clearly defined, etc. — but

people are willful, forgetful and, at times, just plain stupid.

Although the most responsible dive guides can be conscientious toward their divers, even oppressively so, things can go wrong. So, to what extent is your dive guide required to save you, even from the results of your own folly?

The Duty of Care

"Duty of care" can be defined as, "A requirement that a person act toward others and the public with watchfulness, attention, caution and prudence that a reasonable person in the circumstances would utilize. If a person's actions do not meet this standard of care, then the acts are considered negligent, and any damages resulting may be claimed in a lawsuit for negligence."

Businesses have a duty of care toward their clients. It is the responsibility of any company to ensure that customers are kept out of harm's way. In some countries, there are statutory laws in place, but justice is also dependent upon civil law. Is the dive guide required to risk his own life to save a client?

Where there are government agencies with teeth that enforce strict laws regarding the employment of divers, including diving instructors, there have

often been cases where companies have been prosecuted for malpractice. However, how far must they go? In the world of diving, training agencies everywhere take the position that if no training agency rules are broken while diving and if its standards and procedures are maintained, the training agency has no further interest. If there is a problem, it has no power other than to disbar an instructor. It's a touchy subject, so we contacted PADI for its policy, but, in common with some other training agencies, PADI declined to comment.

Things are different once a certified diver is let loose to pursue his own interests on a dive. Can the company a dive guide works for expect that guide, an employee, to risk his own life or health to keep a customer out of harm's way? The short answer is, "No."

Sean Harrison of SDI/TDI World HQ offered,

"The one overarching message that must be made clear here is, all divers and snorkelers or any person involved in adventure sports has to have personal responsibility. It is never wise to exceed one's ability with the only back-up plan being "someone else is going to rescue me."

That's not to say that negligence is never a factor, but it needs to be proved. Nevertheless, it is often the selfless actions of such dive guides that stop a diver's thoughtless behavior from turning into something worse. Such individual acts of heroism are almost common. Dive guides, like everyone, usually have a natural empathy for others.

Bret Gilliam, a familiar contributor to *Undercurrent* and a professional dive trial witness, with tens of thousands of professional dives in his logbook, told us: "Diving certainly has a variety of situational emergencies where the survival of a

Sherwood, You Have a Camband Problem

Bill Watts (Coconut Creek, FL) wrote to us to say that he believed his Sherwood Avid BCD has a safety issue that the manufacturer is ignoring. The plastic holding the retaining straps for his tank broke, and since the camband apparently does not actually run through the fabric of the BCD, the tank was released. When the plastic breaks, there is nothing to hold the camband to the BCD.

When the same thing happened to his wife's new Sherwood Luna BCD, on jumping off a dive boat in Fiji, he was concerned this was a design fault and wrote to Sherwood about it. The company replaced both BCDs without question.

Recently he was diving with friends who had bought similar Sherwood BCDs on his recommendation. Both broke in the same way, the man's when he stood up ready-equipped to dive and hers when she hit the water, almost pulling her regulator from her mouth.

"I was horrified to look over and at 70 feet [deep] see my buddy's tank floating away from her BC. I used a safety strap I have for my camera to tie it to the BC to get her to the surface. It could have been a very bad situation if she had not been cool and calm and had not been with such an experienced diver as myself."

There is no shortage of reports of this problem on the Internet. This was pulled from a Leisure Pro online product review, from an unnamed diver: "I am a pro diver. This [BCD] was sent to me as replacement

of Luna BCD from Sherwood. When I received it, I was impressed with the new design. This was my third BCD from Sherwood. It looked good, but it is a horrible BCD. The backplate is of very fragile plastic, and it looks exactly same as the Luna BCD that broke after six months of use. I was very surprised that they continue using the same style, since many of my friends had the same problems with the backplate and stopped using their product."

Charlie Bush, president of Cramer Decker (Sherwood Scuba), told *Undercurrent* he was unaware that there was a safety issue with current models of the Avid and Luna. On checking with his technicians, he had been told that, bearing in mind there are twin tank cambands, for the tank to completely separate from the BC would require the simultaneous failure of four separate components, which is very unlikely. He said the few that have been returned with this fault have been several years old and that Sherwood had not heard of any failure happening while a diver was under water.

Well, we have told Sherwood of these cases and now they are aware. Clearly, if a BCD camband breaks away from its mounting point and allows a tank to become unstable, even wrenching a regulator from a diver's mouth as reported in one case, that could cause panic, despite the tank still hanging there. It's a serious defect. Let's see what they do about it.

Have you had problems with your Sherwood BCD? If so, write to us at BenDDavison@undercurrent.org

A Gruesome Start to A Dive Trip

Scuba divers often get to see the unexpected when underwater and usually relish the idea. Not so Florida diver Tom Sullivan, who spotted something unusual protruding from under the dive dock while he was waiting for the return of a previous charter and a group of fellow Americans, before departing from an annual trip to dive the St. Lawrence River in Canada. His worst fears were confirmed when he and the dive boat's first mate, Ryan Anderson, went to have a look. It was a corpse.

Anderson said it took a moment for the realization to sink in that Sullivan had spotted a body, rather than

some loose clothing bunched together or a scuba suit that somehow became caught in the dock structure. Sullivan said the body was wedged in place tightly and at first glance could have been brushed off as something innocuous, but he alerted operators of the 'Under Where? Dive Charters' of his suspicions.

Anderson said, "I don't know how he spotted it. It was just the edge of a foot or a heel that was visible. It's definitely a little disturbing." The body was removed from the water with the assistance of city firefighters and taken to Ottawa for a post-mortem. The dive charter later proceeded as planned.

guest (usually less experienced than the guide) is dependent on immediate effective assistance or rescue. Personally, I have always accepted that responsibility and trained my staff the same way.

"If you're maintaining the proper 'awareness' and a dangerous event begins, early response can mean minimizing the risk to both people and get a positive outcome. Yes, I would risk DCS to save someone under my supervision ... and I have done that several times ... It's a matter of personal character. Dive professionals have to make the call based on their experience, physical ability, and confidence. The dive guide must always assume that if things can go wrong, they will, and usually all at the same time. If that mindset is maintained, the dive guide will be prepared to react."

What Some Dive Operators Say

Undercurrent asked a number of dive operators about how they instructed their crews, and they were much in agreement. Craig Stephen, the operations manager of Mike Ball Dive Expeditions based in Queensland, Australia, explains that they are governed by a legal code. He said, "Dive guides are not expected to risk their own health or safety to aid a rescue; however, they are also not expected to sit on the sidelines as a spectator. This comes back to their 'duty of care,' and as such, it is expected that they would conduct a rescue to the best of their ability without endangering themselves; not making a rescue attempt would certainly come under scrutiny ... Under the statutory Queensland code-of-practice, [dive guides] should not be expected to dive to depths in excess of 130 feet ... The decision to initiate a rescue [if a diver sinks beyond 130 feet] could only be determined by the dive guide at that time; with the outcome seen as either heroic or fool-

ish. The decision would be down to the individual and his or her experience, confidence and ability to assess the situation and act cool under pressure."

Alexander Bryant, who operates nine Emperor and Constellation Fleet liveaboards in the Maldives, said, "Dive guides are required to look after and monitor the safety of divers ... Essentially, they are part tour guide, part majority safety control officer. However, they should never put their own safety at risk — how can they help if they are also in trouble? I firmly believe that to look after others, you must firstly look after yourself and be a role model."

Mark Shandur of the Siren Fleet said, "We do not require our guides to risk their lives attempting to rescue other divers. Nevertheless, when faced with a diver in peril, our guides have been known to give whatever aid is needed, regardless of the personal sacrifice involved."

Peter Hughes, with a lifetime's experience running dive centers and liveaboard operations, says he always told his employees, "We do not set maximum depth limits such as 100 feet as so many others do. In our dive briefing, we inform divers that we expect them to dive within the safe no-decompression limits as determined by their individual certifying agencies ... It was the [prevailing] opinion of my attorneys that once you set such a limit, then you [the operator] impose upon yourself the liability to enforce that limit."

He also told his employees, "Do not risk your own life ... to rescue someone who is excessively violating, of their own free will, the safe diving standards as taught to them by their certifying agency. This may seem a bit harsh, but it is harsh by necessity — one life lost is better than two!"

Hughes also told *Undercurrent*, “I always expected my diver [clients] to dive within their own limits. Surely [individual divers] can be expected to know their own limits better than my dive guides or myself?” Though one must add, many divers today have certifications that may not reflect their real diving abilities.

“The dive guide should expect mistakes and be ready to quickly respond.”

Hughes also cited the ‘Mike Armstrong Opinion’ of 1974, co-authored with the late Captain Don Stewart after the latter experienced his first client fatality at his dive center in Bonaire and was considering winding up his operation because of it: “Once a person becomes certified and has some experience, there becomes a guide/diver relationship, rather than a teacher/student relationship. The guide, acting in an advisory capacity, should warn of known, unobvious hazards, inform of local laws, customs, etc. The guide is then felt to have a minimal responsibility for the diver’s actions. But he/she should not be expected to make the basic

go/no go decisions when the diver has all the facts before him/her. The ultimate decision is left up to the diver’s own good judgment.”

Of course, nobody wants anyone to get hurt. In some parts of the world, if there is a fatality, those involved are imprisoned pending the police investigation — a good incentive to avoid accidents at any cost. In many remote parts of the world, dive guides are considered to have elite jobs with above average pay and do everything they can to preserve them. No business wants the stigma of a diving fatality attached — so it is a practical and commercial consideration, along with morality, that usually drives the cause of safety.

This is tempered by perceived personal risk. When David Shem-Tov was grabbed by a saltwater crocodile while diving in West Papua (*Undercurrent* August 2009), there was a distinct reluctance on the part of anyone including the crew to enter the water to save him. David eventually escaped and bore the dive guides no ill will for not trying to tackle the crocodile.

When it comes to safety underwater, the local guides will know about currents and possibly hazardous marine creatures, but their knowledge of more

Mako Shark Bite Lawsuit Makes Court Progress

Elke Specker, of IN2 Focus Media, was bitten by a shark during a guided dive while videoing mako and blue sharks in June 2015. She was diving with a group who embarked on *Cetus Specula*, a vessel out of San Diego, CA. As a result of the bite, Specker is said to have “sustained multiple severe permanent injuries and disfigurement, as well as emotional distress.”

Mako Divers advertises safe out-of-cage encounters with mako and blue sharks in San Diego. In a lawsuit filed against Michael Kazma, owner of Mako Shark Diving, also known as ‘Mako Mike,’ the suit notes that they took a group of divers out and chummed the water before feeding the sharks. Specker believes that Kazma was intoxicated at this time and improperly and negligently directed the divers, including Specker, to an unsafe area. She alleges, “that to feed a swimming mako shark, Kazma held the bait so that it led the shark directly towards her.” The shark bit her. Specker also alleges that *Cetus Specula* did not carry proper first aid or medical equipment. Represented by Richard Lesser and Richard Jorgensen, she names both Kazma and Mako Shark Diving, and *Cetus Specula* and Yellow Charter Boat, as defendants.

One of Specker’s attorneys, Jorge Lopez, told the judge that his client was wearing a 7-millimeter-thick wetsuit when she was bitten, “so you can imagine how sharp and strong the bite was.”

Adam Jaffe, who represents Kazma and the Mako diving company, told *Courthouse News* that his client was not drunk, and that Specker was not even bitten by the shark. Jaffe said he has a video from an unrelated third party, which shows that a mako shark did not bite Specker, but that she ‘sustained a laceration’ when her leg was sliced after the shark’s mouth got caught on her wetsuit as it tried to escape. He added, “She had an interaction with a wild animal that turned bad, but she was not bitten.”

The mako shark can grow up to 10 feet long and weigh 660 pounds. According to the International Shark Attack File, there were 42 recorded attacks by mako sharks on humans between 1980 and 2010, in which three people died.

In February of this year, Yellow Charter Boat announced on its Facebook page that it was ceasing operations. The case is ongoing.

Flower Garden Banks May be Off Limits to Divers

Divers have been warned to avoid the Flower Garden Banks. According to NOAA, the reefs 70-100 miles off Texas in the Gulf of Mexico that normally teems with marine life appear to be dying and scientists have no idea why. Recreational divers exploring the East Flower Garden Bank have been dismayed to find the corals and sponges coated in ugly white mats of algae, while dead animals such as sea urchins, brittle stars, clams and other critters litter the sea floor.

NOAA officials have said that the bank is undergoing a large-scale mortality event of unknown cause and recommend the public avoid diving, fishing and boating activities in the area. This is to prevent transmission of whatever is causing the mass mortality to other locations, but also to protect divers from ingesting what could be harmful pathogens or toxins.

Possible causes could include poor water quality, disease pathogens, chemical spills and an influx of low salinity coastal water that is rich in plankton, nutrients and chemicals that get into the Gulf by way of agricultural run-off and river discharges. These can combine to make coral reef animals more prone to outbreaks of disease. Scientists have voiced concern that shielding the Banks from human impact may now be insufficient to protect them.

“We know of no spills that have recently occurred near the Flower Garden Banks,” said Sanctuary Superintendent G.P. Schmahl, “but water temperature over the banks is quite high, at 86 degrees.”

Sanctuary Research Coordinator Emma Hickerson estimates the mortality of corals to be nearly 50 percent in some of the affected areas. Hickerson says the die-off has been seen at three dive sites that charter boats typically use.

Mary Wicksten of Texas A&M University said, “On my last trip, I saw at the East Bank that one large coral head was covered by unidentified red algae. The last guess that I heard was that these encrustations were not directly due to human activity but probably had been carried out there by the floods in Louisiana and Texas.”

Sharon Cain of *Fling Charters*, working out of Freeport (TX), told *Undercurrent*, “We are still running trips out to the Flower Gardens - West and East Banks and Stetson Bank. At this time we are not diving the areas that have been impacted with the problem. As far as I know the West Bank, Stetson Bank, and some areas of the East Bank are fine at this time.”

insidious dangers such as theoretical and medical matters may be basic, to say the least. First-world operators put operating procedures in place in an attempt to avoid disasters.

Difficult Choices in a Double Crisis

Then there is the dichotomy between what to do should the boat crew find they have a casualty on board in need of urgent medical attention found only ashore, but with divers still underwater. Divers may have been briefed that in an emergency, a crewmember will repeatedly bang on the ladder or rev the boat engine, but divers often ignore such actions, especially if they have found an interesting subject for their camera. The captain can hardly depart and endanger the rest of these passengers. What to do?

Again, Peter Hughes offers sage words: “One would have to consider the possible variables. How imminent is the death of the injured passenger? How long has the diver been missing [or underwater]? What are weather/sea conditions? What other help is nearby? Are there trained first responders such as the Coast Guard? Was there an alternate

means either to transport the injured passenger or to continue to search for the missing diver? Are we on a liveaboard miles from help or are we land-based and minutes from shore?”

Clearly, every boat captain may assess the scene differently, but the truth is, there is no definitive procedure, and a diver in deep trouble cannot necessarily expect the crew to be there for him.

Bret Gilliam added, “It’s the essence of triage. A diver who drifted off or an accident that occurred while other divers were only part-way through their dives may not be a life-threatening situation for the other divers. They can surface and float without effort. If possible, I’d deploy a dinghy or launch, or even put another dive professional in the water to try to round up the others while an evacuation was made for the seriously injured person. With today’s GPS, locating devices and waterproof marine radios, there is a good chance that you could return and recover those left behind. It’s a tough call.”

Mark Shandur of the Siren Fleet said, “We do extensive safety planning — taking into account all manner of ‘what ifs’ — to ensure that we never have

to choose between two such grossly unacceptable alternatives. In the specific situation described, we would use one of our two skiffs (our fastest vessel) to send the injured diver to shore for medical treatment and use the other skiff (along with the main vessel, other vessels in the area, local marine park rangers, etc.) to search for the missing diver.”

Accidents happen. If there is alleged negligence, there is always a lawyer prepared to take on a civil case. It’s when liability waivers are tested. However, bear in mind that even in the event of an award by a Court, it might be difficult to enforce a judgment outside of the plaintiff’s own territory.

Bret Gilliam summed it up well:

“Depth can be an obstacle, but if a guide has sufficient remaining breathing gas, he should [try to] save the victim. I don’t like the idea of embedding an expectation in guests that all guides will come to their rescue no matter what foolish or irresponsible behavior they initiate. But with the ‘dumbing down’ of dive certification training in the last decade, you’re going to see divers make mistakes due to lack

of experience and a false confidence. Remember, you can be awarded an ‘advanced diver’ rating after doing only nine dives. The diver may well believe that they actually are qualified, but professionals know otherwise. The [dive guide] should expect mistakes and be ready to quickly respond.”

Finally, there is the only-too-familiar situation where you find yourself paired with a buddy of whom you have no prior knowledge. How much responsibility do you take for that person if his or her diving practices are what you consider to be beyond the pale? You can remonstrate with them after a dive is over, but what do you do if they insist on going to a depth you decide is unsafe, enter an overhead environment, interact with marine life in a risky manner, mismanage their air supplies or ascend too speedily? We’ve all been there at some time.

Let us know what happened and how you handled it.

Further reading: http://www.undercurrent.org/UCnow/dive_magazine/2011/DiversDeath201102.html

A Realistic Video Game Based Underwater

not the usual violent, action-packed production

“*Abzu* takes place underwater, where you can explore super-cool ocean environments that abound with sea creatures, plants, and sunken ruins, scuba-diver style. There are no timers or other challenges — you’re just submerged into settings that you can swim around to your heart’s content. And yes, you can interact with the sea life you encounter.” So says the publicity.

But what is *Abzu*? Well, in the world of video gaming, where extreme violence appears to be the norm, this is a game for PCs, Playstation 4 and NVIDIA’s Shield devices produced in the Giant Squid development studio that actually reflects what every diver appreciates about the underwater world.

Aquatic-based video games tend to be inspired by movies more than reality, a flaw that quickly surfaces when a player with diving experience grimaces, such as being harassed by thugs in orange rubber wetsuits every two minutes. Happily then, Giant Squid, the Santa Monica-based studio, has sidestepped

Hollywood by delivering an experience that focuses on exploration. In choosing the name *Abzu*, Giant Squid has implied reference to ancient cultures and legends.

You first find yourself floating on the surface in some curious free-diving gear, and are led through a short tutorial that teaches you how to orient yourself to your new surroundings. The main character is intentionally ambiguous, and having played the game to its conclusion, I still couldn’t tell you much about him. This is by design, however, as the game takes you on a journey to be absorbed rather than rushed as you travel from one compartment of water to the next. There are no timers, no real dangers; you simply exist as the underwater life exists with you.

The protagonist is evidently breath-hold diving, although you never need to worry about thoracic squeeze or resurfacing for air (the reasons for which become clearer later on). The moment-to-moment experiences are of finning around encountering

unnaturally disparate species in the same pocket of water. The studio has created an idealized diving environment that aggregates all the best locations, rather than portraying a singular one. Most of the game is spent interacting with magic blue holes, riding on large fish or sea-bound mammals, solving simple puzzles that open up new areas to explore, and even meditating on totem-like shark/dog statues.

From both the visual and sonic perspective, it's hard not to be impressed by the quality of presentation. The graphics are willfully stylized, a choice the studio must have made to permit the enormous numbers of fish that are on-screen at once. Their movements and behavior are incredibly distinct and believable: You might be staring at a trumpet fish only as it bags a little sea bream right before your very eyes. The swirling schools of giant trevally are frankly jaw-dropping.

All the while, a vivid sound design and a haunting music score elevate the overall experience to something special. As the journey progresses, elements of a story unfold — although the why of this tale is very much up to the viewer's interpretation, much like the end of *2001: A Space Odyssey*.

In a more straightforward affair, this might be an issue, but in the case of *Abzu*, it seems to fit. There can be an otherworldly sense of mystery to our oceans, and this game captures that in a masterful way.

Abzu is available for PC from <http://store.steampowered.com/app/384190/> and for PlayStation 4 from <http://store.playstation.com>. It may make a novel gift for someone who likes both video games and scuba diving.

Rob Bantin is a games software writer with a family connection to the world of scuba.

For Still Photography, Strobe or Video Light? *the choice has become less clear*

Photography techniques continually evolve. Back in the '60s, when I first started life as a photographer, lighting for photography was directly developed from lighting for movies, with huge spotlights of 5000 watts and more. Flash was limited to expendable flashbulbs, some as big as household bulbs, which came at a cost. This was paralleled in the underwater photography world, where pioneers used big flashbulbs because the batteries needed to fuel big constant light sources were impractical.

Then came the reliable electronic strobe, and eventually, underwater electronic strobes became reliable and small enough not to encumber a diver carrying a big camera. Electronic strobes became "de rigeur" for underwater still photography. However, shooting video was different. You needed constant light output.

As recently as 1992, I carried video rigs into the water that weighed more than 150 pounds, thanks

A Cosmetic Risk to Shark Populations

One reason sharks are disappearing from our oceans is that their liver oil, otherwise labeled squalene, is used in moisturizers, deodorants, suntan lotion, lip balms, lipsticks and other cosmetics. It is also used in vaccines and even high-grade machine oil. Health food stores sell squalene and shark cartilage (chondroitin) to people who think it protects against a variety of conditions including arthritis, shingles, rheumatism, hemorrhoids, psoriasis and cancer. There is virtually no evidence it works for any of these conditions.

The highest return of squalene comes from the livers of deep-sea sharks such as Gulper sharks, kite-fin sharks, Portuguese dogfish and chimaeras. These

sharks are intensively fished, yet because of their life history (long-lived, slow-growing and slow-reproducing animals), they are unable to respond to the level of fishing pressure placed on them — many are now listed on the IUCN Red List of threatened species.

There are alternatives. Squalene can be produced synthetically or from vegetable sources. Many large cosmetic manufacturers have committed to moving over to non-shark squalene, and so will state that it is 'vegetable based' or from 'vegetable origins.' To save sharks, look at the label before you buy.

(Source: www.sharktrust.org)

Lost Camera Floats 530 Miles

Do you know that awful feeling when, after you've climbed into the boat, you find your camera's gone missing? British diver Adele Devonshire, 37, was diving off St. Abbs in Scotland in 2013 when she discovered that the clip attaching the waterproof case holding her Fuji camera in its waterproof case to her BCD had snapped. After an extensive yet unsuccessful search of the shoreline, she gave up hope of ever seeing it again.

This July, she was astonished when she saw an on-line post by Lars Mossberg, 57, who found it sitting atop a rock on the shore of Gullholmen, the small Swedish island where he lives. He had posted some of the photographs recorded in the camera on a social media website called 'Lost at Sea.' It took only five hours to find Devonshire after a pal whom she'd been with when she lost it three years earlier recognized the pictures.

After finding it among the sea grass and shells along

the rocky coastline, Mossberg took the camera home, not expecting it to work. It was only after he'd dried it out and pried open the case that he discovered the camera was unharmed and still fully functional — with around 500 pictures stored on its memory card.

Hearing English spoken by the voice on some of the movie sequences, he deduced its owner must have been British, and hence, posted on an English language site. Devonshire said, "I never did replace it, so I'm really looking forward to getting it back. It's been on quite a [530 mile] journey," having floated past Denmark and Norway to the Swedish coastline.

A British diver, John Bird from Nottingham, lost his camera in exactly the same place two years previously and says he contacted Mossberg on reading of Devonshire's luck, in case the Swede spotted another one, but he wasn't so lucky!

to the huge ni-cad batteries for the lights. They often had to be derricked into the water. Even so, the lights were not bright enough to light up a subject more than 30 inches distant.

Today you can buy a 15,000 lumen LED light that weighs less than two pounds, including its battery. Underwater strobes are tiny compared with their light output. For video, obviously, you need a constant light, but should you now consider video lights for still pictures?

Electronic strobes, even in a small package, can deliver a high output, more even than that 15000 lumen light, in an instant burst, freezing the action. A set of four small batteries will last for hundreds of exposures. However, you need to know what you are doing. This comes with practice, because you cannot see the effect before you take the shot. The light pulse must synchronize with the camera's shutter opening.

With modern digital cameras, that can be more complex than you'd imagine. If you use the camera's little on-board strobe to trigger the main off-board strobe via a fiber-optic connection, you need the off-board strobe to be able to tell the difference between a pre-flash and the camera's main flash. Some underwater strobes have a built-in aiming light, too, but they're only good for telling you where the strobe is pointed during a night dive.



To help a camera focus on macro subjects, it's often a good idea to employ a separate aiming light mounted on the camera. These can have an auto-flash-off function so there is no annoying spot of light added to your pictures. These aiming lights can also have a red light mode so marine life is not aware of your presence until you ambush it with the pulse of white light from your strobe.

With a video light, you can see its effect before taking the picture, but it will not give you a small working exposure as a flash, and also provides less depth-of-field (focus). It can also be difficult to get close to a subject, because the light might scare it. However, many photographers are using video lights for extreme macro photography because they can move the light so close. Of course, you can use a constant light source (video light) to shoot live action as well as still images, and many underwater photographers switch between the two during a dive. A video light's controls are easy to understand, as well. As for cost, by the by the time you've mounted it on the camera, the cost will be around the same as a strobe.

So which is best for your needs, a strobe light or a video light? A new product combines both. The newly developed range of lighting systems called the iDivesite SS-1 Symbiosis and the doubly powerful SS-2 Symbiosis each combine a 2000 lumen video light with a strobe, powering both from the

Diving Death Compounded by Poor Payout

After ruling on the case brought by the family of a Taiwanese tourist who lost her life while scuba diving off New Zealand's Coromandel Peninsula two years ago, a judge in Hamilton set a penalty fine and reparations at \$191,000, but took into account the defendant's financial capacity, reducing the fine to zero and the damages to only \$70,000.

Aside from inadequate supervision, the woman was fitted with a BCD that was too large and made it difficult for her to lift her head out of the water to breathe. She swam out of the enclosed bay where the dive was taking place, exhausted her air supply and was found hours later floating face down in the water.

WorkSafe chief inspector Keith Stewart says the death was entirely preventable if the dive operator, Cathedral Cove Dive Ltd., had given her appropriately sized gear and supervised her in the manner required. He says water-related activities always come with the risk of drowning, and CCDL should have managed this risk and been vigilant with their clients, especially groups where the participants have no experience. "Sadly, a woman has lost her life and a family have lost

a mother because of failures by the company and its director to meet their legal obligations."

CCD Ltd. and director Russell Cochrane had earlier pleaded guilty to three charges under the Health and Safety in Employment Act for failing to keep the woman safe.

To us, that seemed like a paltry sum in American terms, so we asked David G. Concannon, a highly regarded Pennsylvania lawyer who specializes in scuba litigation, for his opinion. He told us, "If this case had been heard in the U.S., the damages awarded would be based on the victim's age and earning capacity until she reached the age of 65 (reduced to present value). So, if she were a 35-year-old engineer earning \$100,000 per year, the economic damages would be \$3 million reduced to present value, or roughly \$2 million. Pain and suffering would be added to the economic damages, usually in an equal amount, so that's another \$2 million. In rare instances, punitive damages could be added, too, perhaps an additional \$1 million to \$3 million. There would be no reduction for the defendant's inability to pay."

same rechargeable battery.

Either makes a viable alternative to two separate items of equipment for those wishing to shoot both still photographs and video on the same dive, although the weight of the battery makes both

slightly unwieldy. The designs are so new that I have yet to hear confirmation of reliability. They are expected to cost around \$600 and \$750, respectively.

— *John Bantin*

Flotsam & Jetsam

Fish Pee in It! The pee of fish is rich in phosphorus, and their gills give off ammonia — two chemicals corals need to stay healthy and strong. Recent research at the University of Washington's School of Aquatic and Fishery Sciences, and published in *Nature Communications*, has suggested fish waste is a primary link in the good health of the reef. Part of the reason coral reefs work is because animals play a big role in moving nutrients around. Fish hold a large proportion, if not most, of the nutrients in a coral reef in their tissue, and they're also in charge of recycling them. Well, where did you think their

pee went? Moreover, as fish are being depleted, so goes the pee — and the reefs.

Manatee Casualties Climb. Boats are killing manatees in Florida at an unprecedented rate. Seventy-one manatees have been hit and killed by boats by mid-July, a faster rate than even in 2009, when a record 97 manatees were killed in boat strikes all year. The Save the Manatee Club contends that cheaper gas prices, an improving economy, a mild winter and hot summer have combined to put more boats on Florida waterways, but boaters — the guys who are hitting them — say that polluted Florida waterways have reduced manatee habitat, thereby making them more vulnerable to accidental boat strikes.

British Diver Still Active at 93. While we were identifying older diving couples in the August issue, news came in of a British diver living in Cyprus, Ray Wooley, who has made more than 40,000 dives. In August, he was 93 and still actively diving. This affable great-grandfather says he only counts dives that are 30 feet or deeper, and is still happy to go beyond 120 feet deep. His 29th dive of 2016 was on the wreck of the *Zenobia* off Larnaca. While many older divers prefer to take their gear off in the water, he proudly climbs the ladder back on board to dive boat wearing his. (Source: *Cyprus Mail*)

The Mola-mola Return. The small island of Nusa Penida off Bali's southeast coast has a reputation for diving with manta rays at its cleaning stations, but at certain times, usually late summer, mola-mola, the large docile sunfish — it can weigh up to 2000 pounds, with a fin-to-fin height of eight feet — migrate there, too. We hear that they have recently returned in aggregation. The area is notorious for difficult currents, and there have been several instances of inexperienced divers being lost there.

Kill the Whalesharks, says God. Nelson Garcia, the mayor of Dumanjug, Cebu, has said he considers whale sharks and dolphins to be pests because they eat two tons of fish a day. In contrast, fishermen only manage to catch two kilograms of fish daily between the islands of Cebu and Negros Oriental. So, he wants to kill those whalesharks, and when asked if he was aware that killing whale sharks and dolphins is a crime under national and local laws, he responded with a biblical quote, saying God had said man should have dominion over the ocean, the fishes, the birds, and the animals.

The Divers' Flag Reconstructed. Florida State lawmakers have changed the classification of the

dive flag, the familiar red flag with a white diagonal stripe, and are now calling it a "divers-down warning device", in the hope that entrepreneurs will come up with innovative ideas for safety equipment. If a dive flag is blowing directly at an oncoming boat, it becomes invisible. A different device, such as a three- or four-sided buoy, would be easier to see. In many other parts of the world, the red and white flag isn't even known. The required "diver down" flag is the international 'A' flag, a blue and white pennant, and in some countries, divers are required to indicate their presence underwater by means of a buoy bearing such a device.

Rajan, the Diving Elephant, Passes. You may not have dived with him, but you've almost certainly heard of him or recognize his image or have seen him in documentaries. In 2004, a film company abandoned Rajan the elephant on a small island in India's Andamans, after it proved too expensive to ship him back to the mainland. A local resort, Barefoot, and their dive operation, Barefoot Scuba, adopted him, and with Nasru, his mahout, he soon became a major attraction for visitors to Havelock Island. The last swimming elephant, he died at age 66.

Endeavour's Remains Found. In 1770, Captain Cook discovered Eastern Australia in the bark *HMS Endeavour*. It was returned to the Royal Navy and used during the American War of Independence, when it was blown up off the coast of Newport, RI to create a blockade. The Rhode Island Archaeology Project now believes it has found the remains of the wreck alongside 13 other ships in a massive archaeological investigation that combined high-tech mapping of the seabed with analysis of historical shipping documents found in London. But don't expect to dive these historically significant ships.

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Letters to the Editor/Submissions

Editor BenD@undercurrent.org

Editorial Staff

Ben Davison, Publisher and Editor

John Bantin, Senior Editor

Dave Eagleray, Webmaster

Contact Us Call: 415-289-0501

Go to: www.undercurrent.org/UCnow/contact.shtml

or write: Undercurrent

3020 Bridgeway,

Sausalito, CA 94965

www.undercurrent.org