

undercurrent

The Private, Exclusive Guide for Serious Divers

March 2013

Vol. 28, No. 3

Kasai Village, Cebu, Philippines

even a typhoon can't affect the good diving

IN THIS ISSUE:

Kasai Village, Philippines.....	1
Belize, Hawaii, Palau.....	4
The Reason for Wrinkled Fingers	5
A Lost-at-Sea Diver Tells His Tale.....	7
Comparing Dive Computer Watches.....	9
Price Gouging and DCS in China.....	12
Dead Divers' Big Mistakes: Part I.....	14
Hey, There's an App for That Dive	16
Don't Call Them "Shark Attacks" Anymore.....	17
Flotsam & Jetsam	18

www.undercurrent.org

Editorial Office:
Ben Davison, Publisher and Editor
3020 Bridgeway
Sausalito, CA 94965
EditorBenD@undercurrent.org

Dear Fellow Diver:

Here I was, on my third trip to the Philippines, searching for diving that really excited me, and we were about to be whacked by a major typhoon. Bopha was forecast to go right over Kasai Village on December 5. Suitcases were repacked "just in case," and everyone spent the evening huddled in the reception area, eating dinner and watching bad movies, planning to hunker down in the relative safety of the camera room if necessary. Luckily, we were spared, however, Bopha hit Mindanao, southeast of Cebu, causing mudslides, much destruction, and tragically, more than 1,000 deaths. Only the outer bands of wind and rain hit Cebu, so I can report that I did indeed find that great diving -- though I couldn't stop dwelling on the nation's great loss.

Depending on road traffic, Kasai Village Dive & Spa Resort is a three- to five-hour van ride from Cebu City, where my partner and I flew to nonstop after overnigh-ting in Hong Kong. Separated from nearby resorts, the new Kasai Village is more private, though construction was still winding down. My spacious oceanfront room, one of nine, had a king bed, nightstands, desk, couch, wardrobe, ceiling fan and air conditioning. The roomy bathroom had a huge shower with instant hot water (but it would shut down temporarily if guests in other rooms were showering; I was advised a pump was on its way to fix the problem). And while American hotels are touting fluffy beds, the nearly inflex-ible pillows and the rock-hard mattresses here were unwelcoming



Kasai Village's Dive Boat



and left me with sore hips. My room had a large ocean-view patio with a table and two chairs. The four smaller pool-view rooms had small patios facing the pool. If any problems arose, the smiling staff quickly addressed them.

Three boat dives a day plus unlimited shore diving is the advertised enticement, but in reality, I only had time for three dives daily because 70-minute dives and surface intervals ate up the clock. The roomy dive banca had a large covered area, dry shelves and back-to-back tank racks in the middle. The bow had the typical long nose that I stepped onto from the steps leading down from the dock; it got a bit tricky if it was choppy. When the tide flows from the rocky shoreline, the ocean bottom is exposed quite a ways out. Locals waded out or snorkel with containers, looking for anything edible. Some staffer was always happy to buddy up with a lone shore diver, and most of our boat dives were along that wall, sometimes

traveling no more than 30 seconds from dock to dive. I saw no stingrays, octopus or lobsters during my 10-day trip, and Tata, my fortysomething local dive guide, said they're pretty much gone.

I can't pass up an anemonefish without taking its picture, and Copton Point had plenty. The terrain flattened at 66 feet, where a large turtle rested under the fuselage of a small plane wreck. My buddy and I worked our way up the slope, where hundreds of six-inch swimming pipefish fascinated me. A second trip here brought two turtles and a school of squid. Although the diving is similar all along the wall, each area also has its unique characteristics. During my 10 days, besides hundreds of pipefish and anemonefish, there were sea snakes, many turtles, several ghost pipefish, a variety of frogfish, schooling squid, dozens of nudibranchs, an occasional sea moth and devilfish, pygmy seahorses and hundreds of blind shrimp gobies. At my age, I can't spot pygmy seahorses, but I pointed my camera where Tata pointed, and one actually came out in focus! Although I didn't see any sharks, I did see one large bumphead parrotfish, and they say whale sharks and thresher sharks occasionally visit. At the end of many dives, I spent 15 minutes at the top of the wall, often in less than 10 feet of water, spying small crabs and nudibranchs, and watching schooling fish. Hard and soft corals were healthy everywhere. At Savedre Marine Sanctuary, dozens of large sea fans grew at least eight feet tall. We did a couple of dives at Pescador Island, 20 minutes away and crowded with dive boats, but its famed schools of sardines were missing. I liked diving off of Cebu better.

Depending on your point of view, Kasai was either a lonely place, or a private one, with four to six guests most of the time. Four of us Americans were here the entire 10 days; a couple of Germans and Chinese joined us on the boat for a couple of days, but we mostly had the place to ourselves. To mix it up, we could take walks or go into town on a tut tut, but after those long dives, I was relaxed and in bed by 9:30.

Meals were usually served upstairs, although once the windows were boarded up for the approaching Bopha, we ate one meal in reception and another day in the lower level of the dining hall, where the lone television and pool table reside. The potent Red Horse beer was popular at the sand-floor bar. Meals are normally served buffet-style, but we were so few that staff served us. Breakfast included eggs, a tasty Spanish omelet, delicious mango and banana pancakes, fruit and toast. Lunch could include an appetizer, one of several sandwiches or a smaller version of a dinner. Dinners offered a choice of chicken, beef, prawns, squid or fish, usually grilled, along with rice and vegetables. Salad and homemade soup were served first, and tasty desserts to finish. One

day, all I really wanted for lunch was a peanut butter and jelly sandwich, but there was no peanut butter to be found -- next time I'm taking my own. The wait staff was ever so nice and polite, but the language barrier meant they didn't always bring forth the expected food.

After breakfast, we left the dock by 9 a.m. for the two morning dives. During the hour-long interval between them, we were served water, hot tea or coffee, fruit and snack crackers. Entries were giant strides, and an angled ladder was lowered for climbing back into the boat. The ladder didn't go far enough into the water to step onto it with a tank on my back, so I used a knee and then stepped up. A guide would gently tug on the tank at the top of the ladder, if necessary. One gentleman had back problems and was able to take off his tank before climbing the ladder.

At Tubla Wall, I saw four turtles, free-swimming pipefish, a leaf fish, ghost pipefish, several nudibranchs, teenage sweetlips and a couple of orangutan crabs. At Fish Feeding, I saw two sea moths, devilfish, banded pipefish and a Titan trigger as big as they come, all on a sloping dropoff. Sampaquita had a bumphead parrotfish, a turtle, nudibranch eggs under a 10-inch-wide plate coral, spider crab in a sea fan, and lots of healthy hard corals in shallow water.

Most dives were slow drifts in 82-degree water with minimal current. The afternoon boat dive went out at 3 p.m., which felt rushed sometimes because we didn't return from the morning dives until 1:00, and lunches were slow. Some divers skipped the afternoon dive, opting instead for dusk/night dives. The small Mandarinfish area was a bust on the first night, but on the second night, they hung out there forever. The night diving was non-stop action -- decorator crabs, cuttlefish, thousands of shrimp, congregating pipefish, hermit crabs and more, all above 35 feet. One night, we started at dusk on Kasai Wall, stopped off to watch the Mandarins at sunset, then finished with a night dive: a total of 105 minutes. The rules are no diving alone and no diving at night without a guide. We used 32-percent Nitrox on all dives. The short, wiry and strong Tata was my best guide ever -- very personable, always cheerful and great at finding things, but if I hung back taking pictures, that was OK with him.

Kasai's impressive camera room had about 15 separate work areas, each with a converter and several electrical outlets; there was a fan but no air conditioning. The open-air dive storage area had lots of rinse tanks, water hoses, benches, hangars for BCs and wetsuits, a waist-level hanging rod and a storage shelf above. Floors in both areas were covered in non-skid, ventilated rubber matting.

The outstanding dive staff worked hard to provide us with the best possible dive experience. For each dive, they loaded up the tanks and equipment, rolled it down the long dock, laboriously transferred everything down the dock steps onto the boat, then did the reverse after our return. For the morning "Typhoon" dive, we were taken 15 minutes by car to a more protected cove. The staff carried all the gear down a hill into the water, helped us gear up, met us after

Kasai Village, Philippines

Diving (experienced)	★★★★1/2
Diving (beginner)	★★★★1/2
Snorkelling	★★★★★
Accommodations (except for the bed)	★★★★
Food	★★★★
Service and Attitude	★★★★★
Money's Worth	★★★★★

★ = poor ★★★★★ = excellent

World Scale



Kasai Village's Poolside Rooms

the dive, gave us snacks, re-loaded the gear, and drove us back to the resort. In the van, the Chinese lady divers asked me "How do you get such a good body?" After almost choking from laughter because they were nearly four decades younger, I explained that diet and exercise were the key, and they looked just fine.

My previous Philippines trips were to Dumaguete (Bahura Resort and Stella Maris liveaboard), and Puerto Galera (El Galleon, Atlantis Puerto Galera and the Atlantis Azores). This trip is the one I'll repeat. Tata went way beyond the call of duty, and I hope he's still at Kasai Village when I return. And I will.

-- J.R.



Divers Compass: My 10-night trip cost \$2,339 per person, and included lodging, diving and three meals a day; staff will pick you up at the airport, and round-trip transfers are about US\$50, but it depends on the number of people in the van . . . The marine park fee ran about US\$5 a day; Nitrox cost me \$200 for the whole trip . . . Bring your own tissues, or use toilet paper, and a small travel pillow would be a decent replacement for the resort's . . . Prepare yourself for mosquitoes in the evening when the wind is calm . . . Website: www.kasaivillage.com

Belize, Hawaii, Cozumel, Palau . . .

Caribbean winter warnings and more trouble with the Siren fleet

Florida's Admiral's Club is Kaput. After we published a glowing piece in November about super critter diving under Blue Heron Bridge in West Palm Beach, using the Admiral's Club as a home base, reader Dawn Steedman (Coral Gables, FL) got excited about the possibilities, only to discover the hotel had just been sold and would become a drug rehab facility. So to meander under the bridge, visiting divers will need a car, and then park in nearby Phil Foster Park, which means a longer swim. Of course, locals have used the park as their base for diving under the bridge's east and west spans. The park is apparently closed after dark.

Winter in the Caribbean. Keep in mind that in the winter months, weather issues like wind and rain may affect your diving. For example, Carol D. Cox (Port St Joe, FL) told us of her planned trip aboard the *Turks and Caicos Explorer*, which travels to the southern Bahamas in November. "I arrived at Great Exuma a few days early to relax, and was surprised to learn from a taxi driver (they know everything happening on the island) that the boat is not based in George Town as the web site implies. It is an hour away at Emerald Bay Marina, part of the Sandals resort complex. Regardless, I was glad I had a chance to see George Town and beautiful Elizabeth Harbor before boarding the boat. As it turned out, we were stuck in the harbor for two days due to the high winds; it was too risky to maneuver the boat through the small channel. Although we were right next to Sandals, one had to pay \$100 a day to use the facilities. A taxi into George Town was \$80 each way. Passengers walked around the marina or watched satellite TV in the marina lounge. The boat was in a section of the marina by itself, so we were allowed to dive there. I did a two-hour dive in 10 feet of water and saw nudibranchs, yellow stingrays, an octopus, cleaning gobies, tons of upside-down jellyfish (which my buddy tried to rescue), juvenile fish and large spiny lobsters. At sunrise on the third morning, we finally headed out and crossed over to Conception Island. It was a bumpy ride, and a few passengers were too green to make the first dive. At this point, there could have been a lot of grumping, but it was a great group of experienced divers aboard who took the problems in stride. At the end of the cruise, they offered a 40 percent discount on a future trip -- a nice offer to make up for something that was beyond their

control, but it turned out we would have to do another south Bahamas itinerary within one year. Even with the discount, this was not a trip I wanted to repeat." And keep in mind that winter water temperatures in the Bahamas can be in the low 70s into February. (www.exploreventures.com)

Roatan can be windy and rainy between December and February, and because of that, Robert Barada's (Walnut Creek, CA) flight from Houston was diverted to San Pedro Sula, Honduras. After going through Customs and Immigration, passengers collected vouchers from United Airlines for taxis, meals and a night at the Hilton Princess. "At the hotel, they told us to stay inside the hotel, and they had armed guards patrolling the grounds. I heard gunshots around 11:00 p.m. I went back to the airport at 8:30 the next morning, but the weather didn't clear until 5:30 p.m., so I didn't arrive in Roatan until 6:30 p.m. I lost a whole day of diving at CoCoView, and it continued to rain every day -- I got to see 20 minutes of sun one day. Because of all the runoff, the visibility was negatively affected." For sure, there is plenty of good winter weather in the Caribbean, but be forewarned.

Chuck & Robbie's, Belize. Not everyone is happy with the diving choices on Ambergris Caye, but we've been hearing good things about this operation. Alan Pittman dived with them in December and says, "Chuck & Robbie's was the most popular dive shop, operating at the north edge of San Pedro, close to the bridge. Other shops did not appear to have enough customers for regularly scheduled trips. The boat dropped divers off at nearby resorts when they were finished diving. C & R have good rental equipment; the divemasters are attentive and professional without hovering. The boat captain followed our bubbles, and picked up divers as they ascended at various times, despite a little chop. The dives are all on the outside of the reef across spectacular spur and groove (canyon) reef formations. There are always nurse sharks and several groupers, because they occasionally do shark, grouper and eel feeding dives. The reefs don't have many large schools of fish, but it was good to see a large number of black, Nassau and tiger groupers, as well as mature dog, cubera and mutton snappers on many dives. We saw mantas on two dives, and seven bottlenose dolphins circled our group a couple of times. During surface intervals, the boat returns to the dive shop, where there are chairs and a picnic table to rest." (<http://ambergiscayediving.com>)

Kona Aggressor II, Hawaii. For a good liveaboard trip not far from home, Randall Preissig (San Antonio, TX) says don't overlook this boat. "This was my fifth trip on the *Kona Aggressor*, and the manta dives alone are worth the trip. I saw 15 to 20 mantas on the famous manta night dive near the airport. We had several humpback whale encounters, and I got some good tail-slapping shots from the boat. I go in January or February just for the whales. I saw mantas on other dives, as well as turtles, a huge conger eel, a horn-helmet snail eating an urchin, nudibranchs, pregnant pipefish, an eagle ray, leaf-fish, a sleeping parrotfish in mucus, pregnant whitetip sharks in a cave, dragon and peacock razor wrasses, a triton shell, schools of barracuda and more. A highlight was the pelagic dive: You hang under the boat at 10 to 25 feet, miles from shore at night under lights, and see what goes by -- anything from jellyfish to oceanic sharks. I think the *Kona Aggressor* trip may be the most underrated trip I've ever been on." (www.aggressor.com)

The Reason for Wrinkled Fingers

As a diver, you can be thankful they get all prune during a dive. It could be an adaptation that gives us better grip underwater.

Fingers and toes wrinkle in water after about five minutes due to the constriction of blood vessels. This reduction in volume pulls the skin inward, but as the skin's surface area cannot change, it wrinkles. A study in 2011 showed that wrinkles form a pattern of channels that divert water away from the fingertip - akin to rain treads on tires. The team thought that this could aid grip. To find out, Tom Smulders and his team at Newcastle University in the U.K. timed people as they transferred wet or dry objects from one box to another, both with and without wrinkled fingers. With wrinkles, wet objects were transferred about 12 percent faster than with unwrinkled fingers. The time it took to transfer dry objects was the same regardless of wrinkles.

So why aren't our digits always prune-like? "With wrinkles, less of your skin surface touches the object, so there may be issues of sensitivity," Smulders suggests.

-- New Scientist, January 12, 2013

"In the current-prone and open waters we dived in, the absence of a second Zodiac was a definite safety risk."

Problems Aboard the *S/Y Maldives Siren*.

We continue to hear of problems with the Siren fleet, and we continue to report them, hoping they pay attention. Longtime correspondent Warren Sprung (Houston, TX) was aboard in January, and says "The two divemasters leading 14 divers divided into two groups were great. When a

diver lost his negatively buoyed camera as he was entering the Zodiac, the panga driver dived in -- in his street clothes -- like a wingless cormorant down to retrieve the camera. Good work indeed! Regardless, this is a penny-pinching operation. The computer in our cabin was inoperable. Megan, a dive guide, apologized, saying it'd been that way for some time and a tech person would come repair it, but that never happened. Even a cabin light bulb that burned out was never replaced as promised. We were told to not put things under the A/C (on the third bed) because the unit leaked water; it dripped literally gallons of water over the 10-day trip. It also never quite cooled the room, and it was difficult to fall asleep while sweating in bed. The ice machine was either inoperable or had very limited ability to produce enough for 14 divers. We were told it would be repaired soon but never was. On the second day, one of the two Zodiacs was damaged -- the tubes in front were compromised. We were told it would be repaired the next day, then the next, and finally that it wouldn't be repaired at all. (I've got to commend Peter Hughes -- years ago in Palau, one of his chase boats was broken and he rented a local boat to cover the divers properly.) This meant that the first group was boated up to a mile from the Siren, dropped off and left on their own until the second group was dropped off. Had there been an emergency. . .well, I'm sure the readers can imagine. I had my new Nautilus Lifeline with me, and while I never had to use it, I thought I would a couple of times after waiting up to 20 minutes on the surface after some dives with no Zodiac in sight. Remember, I'm in the Indian Ocean, with strong currents! There was real potential danger to the divers with only one operating Zodiac in the open ocean. "

Aussie Phil Johnston adds, "I often surfaced to find no boat within sight, the one remaining Zodiac having collected the first group for return to the *Siren*. We were first advised that the deflated Zodiac would be repaired within 24 hours; however, it was found that the glue in the repair kit had gone dry and couldn't be used. We were then advised that replacement glue would need to be flown in from Singapore, but this never materialized. I found it difficult to believe that replacement glue, or a replacement Zodiac, couldn't be sourced in-country, given that boating, diving and fishing are basically the national pastimes. In the current-prone and often very open waters we dived in, the absence of a second Zodiac was a definite safety risk."

Safari Inn, Cozumel. After we reported a reader's problems at this hotel during a week on a REEF-sponsored dive trip, Tom Schaefer (Seattle, WA), who has taken many REEF trips, wrote "Travelers accustomed to four- or five-star accommodations might indeed find the place disappointing. The rooms do not have telephones or TVs, most of them lack refrigerators, and what passes for a couch is very uncomfortable. However, the large air-conditioned rooms are kept clean and tidy, and I find the beds adequately comfortable. The showers are hot and usually have sufficient water pressure. The noise -- all from outside the hotel -- subsides enough during my sleeping hours that I am rarely awakened. And here's the punch line: My single room cost \$47 per night, a rate that does not increase if the room is shared. REEF's price for this trip is less than half that of most of their trips. Because I do not require pampering and cannot afford to pay for it, Safari Inn works for me."

That said, REEF general manager Martha Klitzkie wrote us to say that, "Our annual Cozumel Field Survey trip has consistently been popular because of its low cost. But based on feedback we've received from members like your readers, REEF members now have the option to stay at Aqua Safari or Casa Mexicana, and will still be able to participate in all of the Field Survey dives and activities. You can find more information at www.reef.org/trips."

Helicopters in Palau. Novot Bornovski, the owner of the *Ocean Hunter* boats and the dive shop Fish 'n Fins, tells me he has started a helicopter service in Palau that will be used for scenic tourist flights, but the better news is that it will also be used for search-and-rescue and Medevac efforts. That's bound to save a few lost divers. (www.fishnfins.com)

Good Digs on Bonaire. Faith Evans (Bastrop, TX) says the real deal for lodging on Bonaire is the Djambo apartments. "I opt for upstairs, in one of five one-bedroom apartments so that I have an open front to the pool and common area, and a door to the bedroom that locks to the outside. They also have two nice two-bedroom, one-bath apartments for families or two couples. The owners live there and take excellent care of everything. I get a stay-drive-dive package with Djambo that includes the apartment, a truck with bottle rack and all air/nitrox for a single good price. The rinse tanks are clean, and the dive gear storage area is very secure and clean. No, it's not oceanfront, and there's no restaurant, but there is a nice, little, open bar each evening that's open till 8 p.m. so that you can gather and share the diving stories, then walk to town's many good restaurants." One-bedroom apartments start at \$105 per night, two-bedroom apartments at \$143 (www.djambobonaire.com).

- - Ben Davison

A Lost-at-Sea Diver Tells His Tale

a 14-hour swim from Gordo Banks back to the mainland

When you're diving in underdeveloped countries and somehow get into trouble during a dive, your first line of rescue is the dive boat. Many times, that's your only line of rescue. In remote places, such as eastern Indonesia or the Maldives, you must depend on your boat -- and perhaps other dive boats in the area, because you'll typically be far away from any government authority and its rescue vehicles -- if they have any at all.

Lost-at-sea dive stories also happen closer to home. On July 12, three divers on a trip with Baja California dive shop Cabo Eagle Divers, along with two dive guides, went missing near Gordo Banks, a popular site for hammerhead shark sightings four miles south of San Jose del Cabo. It was not until well after midnight that all of them turned up alive, having swum back to San Jose del Cabo. We asked Mick Kiernan, one of the divers lost at sea, what happened on that Gordo Banks dive. It took a while to get all his information, but he ultimately told us about what went wrong, and what divers should do to ensure they don't end up in a situation like he did.

"I've been diving for 12 years, with more than 300 dives logged, and I'm a rescue diver and chairman of my local scuba club in Kent, England. My 18-year-old son, Daniel, has been diving for seven years and is a PADI advanced openwater diver who has logged more than 100 dives. We've dived in various places, such as the Caribbean, Egypt, Greece, Malta and the Canary Islands. We decided to go to Mexico for our annual holiday, mainly for the diving and to see the hammerhead sharks that frequent these waters. This was our first trip to this country.

"The boat trip took two hours and 30 minutes from Cabo San Lucas to Gordo Banks. On board were six people -- myself, Daniel, Rene the divemaster, Neil, a rescue diver from Australia, Lucia, a divemaster student from Germany and the skipper, who was a friend of Cabo Eagle Divers' owner, Rodrigo Alcacer. I and the other divers concluded later that the skipper seemed totally inexperienced as a dive boat captain, and was unable to follow our air bubbles or our surface marker buoys, even when we reached the surface.

“At Gordo Banks, we entered into a strong current and waited at the anchor line until all five divers were together, then we descended down the line to the reef at 130 feet. The current was so strong it nearly pulled us from the line until about 60 feet down. By the time we reached the reef, I had used about 450 psi from an already poorly-filled tank of 2,775 psi. The visibility was poor on our descent and not much better on the reef. Needless to say, the hammerheads failed to make an appearance. We left the reef after 10 minutes to do a drift dive as planned. Rene and Lucia both sent their surface marker buoys to the surface from about 50 feet. But when we reached the surface after the safety stop, to our shock and horror, the boat was nowhere to be seen.

“The skipper failed to notice us, despite our attempts to signal him with whistles and three SMBs.”

“We waited for approximately 15 minutes before we caught a distant sighting of our boat. The skipper failed to notice us, despite our attempts to signal him and catch his attention with high-pitched whistles and three SMBs. We assumed he would eventually come to our rescue, but after two hours, we had drifted 12 miles out to sea, according to Rene. It was about

2 p.m. when we decided to start swimming back towards land on a compass bearing we had taken earlier when we could still see the Baja coastline.

“My feelings at this stage oscillated between being very angry at the skipper and a little disappointed in Rene for putting us into this situation. As a father, I felt my only duty was to protect my son by offering whatever advice and support I could give. I remember saying to him, ‘Don’t worry, son. Mom will probably think we have gone for a beer or two as we normally do following a dive.’ Dan said to me, ‘Dad, do you remember that film Open Water?’ I immediately said, ‘Don’t go there, son. That was only a film. It couldn’t possibly happen.’ Or could it, I thought to myself.

“As we started our mega-swim, I can remember Rene saying we needed to get as close to the shore as possible, with the hope of picking up a fishing boat or even a rescue boat with the daylight we had left. The sunset was due at 8:30 p.m., and at 3 p.m., we were still 10 miles offshore. The sun was beating down, and the sea conditions were moderate, with a swell and surface current that was carrying us farther down the coastline. We kept together as a group, using our SMBs as buoyancy floats to hold onto while we swam. As night descended, the thought of sharks did enter my mind and scenes from the film Dan mentioned did start to scare me.

“At 8 p.m., it was entirely dark and we were about six miles offshore, but we could see the twinkling lights from the hotels in the distance. Then at 1 a.m. -- Friday the 13th, ironically -- we finally hit the shore after a 14-hour swim. Of all the hotels we could have reached, the award went to the Hilton. There we were met by two security guards, who gave us some much-needed water and a friendly welcome, as most of the hotels had heard about the missing divers on the national TV newscasts.

“We could hardly walk, due to the burning pains in our legs. I crawled up the beach, totally exhausted and very sore from sunburn. We were advised to go to the hospital as a precautionary measure, due to the dehydration and cold we were now feeling, but all that Dan and I wanted to do was get back to our hotel and see Tina, my wife and Dan’s mom. The doctors were waiting for us there. Once they were satisfied with our medical conditions, we were finally reunited as a family. It was one of the most emotional times I can remember, seeing Tina, and equally so for Dan.

“The next day, we could hardly move, due to the pain from our aching muscles and from the sunburn on our hands and faces, the only parts of our body that were exposed to the sun and elements.

“I never thought it would be necessary to check the boat skipper’s level of qualifications and experience, or if the country you’re visiting has search-and-rescue procedures in place. I discovered that no helicopter was available to aid in a rescue. I now know to never take for granted that the dive company

you've been recommended has suitable procedures and safety arrangements in place. I would strongly recommend that the dive leader is equipped with a GPS/EPIRB tracking system, especially in remote waters such as Gordo Banks. And I will always dive with the essential safety equipment such as SMB, flashlight and whistle.

"This experience has definitely shaken up my son, leaving him with horrible memories, not those normally associated with the lovely dives we have done together. It is going to take me some time to get Dan back in the water. I don't want him to give up this fantastic sport because not only is he my son, he is the dive buddy who got me through this ordeal."

Rodrigo Alcacer of Cabo Eagles Divers told *Undercurrent* that the accident was due to "strong currents and waves, which left no good monitoring of the divers and the buoys." Obviously, he doesn't think the skipper was at fault. To prevent similar incidents, he bought new equipment, including a VHF radio for the boat and Nautilus Lifeline GPS systems for each pair of divers to use. "We changed the basic GPS on the boat to a more advanced one, which can receive the distress call of the divers and their location coordinates." He also has an agreement now with other dive shops for mutual support in search-and-rescue efforts, and a contact list of other search boats and aircraft.

No matter where your dive destination, when you are diving with a small operation -- or any operation for that matter -- find out its search-and-rescue procedures, and learn whether the country itself has any capacity. One would surely think that Cabo San Lucas, home to thousands of pleasure craft, would have some public search-and-rescue capacity. These divers learned differently -- and have taught the rest of us a valuable lesson.

- - Vanessa Richardson

Comparing Dive Computer Watches

Suunto, the originator, versus everyone else

In 1997, the Finnish company Suunto first made a deco computer doubling as a watch, calling it the Spyder. Suunto later added a nitrox logarithm and the Stinger was born. Now there is a plethora of computer watches to choose from -- if you're going to the trouble to develop a diving computer, why not make one as a computer-watch variant too? Suunto still dominates in Europe and Asia, but Oceanic's associated company, Pelagic, is popular in the Americas. And now Scubapro and Mares have their own ideas of how it should be done. Let me offer a comparison of key models, in case you are in the market.

Suunto Computer Watches

Not to be outdone, Suunto offers gas-integration by radio transmitter as an extra-cost option in its D4i, D6i and D9tx models. They not only tell your decompression status and current tank pressure, but also calculate how long your gas will last at your depth, and at the rate you're breathing. You can program in a reserve pressure, too. If you keep your remaining gas time longer than total time to the surface, you shouldn't get into trouble.

Deep stops can be selected on the D4i and D6i, although divers can choose to ignore them when the time comes, so these don't seem crucial to the algorithm, rather like the three-minute safety stop at 15 feet. Now you get both displayed, rather than one or the other as with previous models. You used to have to pre-select one or two minutes as a deep stop, but now the algorithm calculates what is appropriate and credits you in the shallows. The actual surface interval is also now displayed between dives, and time-to-fly has been relegated to an icon. The memory logbook shows average depth, plus maximum depth on a dive, and there's a bar-graph representation of the dive.



Suunto D6i

When it comes to the gas-integration option, Suunto's new computer-watches pair permanently the first time and stay paired, unless you choose to change a transmitter code because, say, another diver on your boat is wearing the same watch model as you. The electronic compass display is switched on when you want it and stays on until you decide you don't need it -- unlike the old D6's annoying compass -- and it's three-dimensional tilt-compensated, too. Detailed graphical logs and dive data can be available on your laptop using Suunto DM4 software.

All Suunto computers use Bruce Wienke's RGBM (Reduced Gradient Bubble Model) algorithm that kicks in with repetitive dives. The new alarms attempt to be audible reminders of what they're trying to tell you.

For example, if the computer thinks you should be going up, it has a series of beeps with a rising note, and vice versa. There's a different beep for gas-switch alerts. But when wearing a hood, you need excellent hearing to notice these.

Many people agree that the RGBM algorithm is punishing for repeat dives. The old D6/D9 had the option of RGBM100, or the less cautious RGBM50, but the newer models don't have this feature. However, my tests reveal that the older D9 is more cautious than the latest D6i and becomes even more so with subsequent dives. At one point during repeat dives, the D9 displayed 20 minutes of ascent time, while the newer D6i still had a no-stop display. From this, I deduce the latest Suuntos are less punishing with repeat dives. Alas, all the Finnish technobods were on holiday at the time of writing, so you'll have to take my word for it. (www.suunto.com)

Suunto D4i (\$1,175 list price; \$725 without transmitter). The entry-level, but very capable, model of the three Suunto computer-watches is gas integrated and depth-rated to 325 feet. The deep-stop displays are repetitious, so you can ignore them without further deco penalty. Enabling deep-stop displays no longer disables the safety-stop display as in previous models.

Suunto D6i (starts at \$1,500; \$1,100 without transmitter). This looks slightly more robust than its cheaper sibling. It can be programmed for two different nitrox mixes per dive, it's usable in free-dive mode, and is depth-rated to 500 feet. The stopwatch mode can be activated during the dive. Among all computer watches featured here, the D6i most resembles an everyday watch.

Suunto D9tx (starts at \$1,975; \$1,575 without transmitter). The new D9tx is just as bulky as its predecessor, but it now uses the same Suunto/ Wienke algorithm as the Helo2, which is different from the D4i and D6i. . Preset up to eight different gas mixes, with oxygen percentages of 21 to 99 percent and helium percentages up to 92 percent. It comes with a USB cable for downloading dives to a computer. Unlike its siblings, the deep-stop displays are mandatory, even when used in simple nitrox mode, but it's rated to 650 feet deep. Like the D6i, its stopwatch mode can be activated during the dive. The strap is made from a different elastopolymer than its siblings, and is difficult to thread through the buckle loop over a bulky drysuit-clad wrist. There is the option of a titanium dress bracelet.

Suunto DX (starts at \$2,150; \$1,700 without transmitter). The ultimate computer watch surely is the brand-new Suunto DX (pronounced D Ten). Not only is it a nitrox and multi-gas trimix computer, also integrating with the first mix via a wireless transmitter, it can be configured to work in closed-circuit mode, so that it can be used in conjunction with a closed-circuit rebreather at pre-selected partial pressures of oxygen. A crucial difference between Suunto nitrox-only computers and those also designed for use with helium mixes is the algorithm. The DX employs a fusion of two algorithms. Use it at shallower depths and it performs like a sport diving computer, but with the technical diving RGBM of the D9tx. Go deeper and it switches to the algorithm that Wienke specifically designed for the job, the full RGBM. It's not a sudden switch though; it gradually slides from one to the other so that the switch is hardly noticeable. They call it the "Suunto Fused algorithm." It has all the features of other Suunto computer watches and represents the state of the art.

Oceanic Computer Watches

Some basic philosophies still make a difference when it comes to computer calculations, and diving computers are no exception. For years I railed against the algorithm used by many U.S.-made computers, including those of Oceanic. The problem was these computers were aimed at warm-water leisure divers who do short dives and don't go very deep. The algorithm accommodated this by being aimed at no-stop diving no deeper than 90 feet. Distributors in other countries tried to sell these instruments to divers with different diving habits, in which case the instrument showed its Jekyll & Hyde character, defaulting to a vindictive table that would really punish the user for going beyond those simple parameters.

Now Oceanic is casting its eyes farther afield. Its latest computers come with two algorithms. You can opt for the old Pelagic DSAT no-stop diver's algorithm, or the new Pelagic Z+, which performs much like the algorithm familiar to European divers. It uses the Buhlmann ZHL-16C database, said by Oceanic to meet the more rigorous demands of repetitive, coldwater, deco diving at altitude. That may be true, but it's much more in line with other computers. (www.oceanicworldwide.com)

Oceanic Geo 2.0 (\$450). This is Oceanic's entry-level computer watch and can be programmed for two different nitrox mixes for a single dive. Stop times of three minutes or less are displayed in minutes and seconds. There's an option to use a deep-stop function with a countdown timer at half the depth of a dive greater than 80 feet. There's a gauge mode for technical divers who simply want to record time and depth, and to this end it is rated to 300 feet deep. There's the option of a PC interface with OceanLog download and settings upload, and an auto-update that can download and install the latest firmware.

Oceanic Atom 3 (\$1,020 list price; \$700 without transmitter). This is a top-of-the-range, full-function decompression, three-mix nitrox computer in a wristwatch format. Like some others, it is wireless gas-integrated by means of a radio transmitter that fits to the high-pressure port of the regulator first stage. However, Oceanic goes further. It offers the facility to integrate the computer with all three supplies of the gases being breathed, provided you use three separate transmitters. The standard Atom with one (dark gray) transmitter is intended for the primary supply, but both yellow and green transmitters (for high levels of O₂) are available as extras. PC-based software and a USB interface cable come as standards. The same interface system can be used to upload settings that can change time and date, set alarms, and adjust various utilities such as sampling rate and transmitter link codes. These last can also be set using the computer buttons.

In surface mode, it works as a typical digital calendar/watch/chronograph, with a dual-time function for keeping tabs on things at home when you're in a different time zone. You can set it for nitrox mixes between 21 and 100 percent, and vary the ppO₂ alarm setting from 17 to 23 psi using three independent transmitters on different tanks. Set alarms in advance for maximum depth and a range of minimum tank pressures. The remaining-dive-time alarm is based on worst-case tank pressure, various degrees of tissue loading in no-stop scenarios, turn-round tank pressure (when it's time to head back) and even elapsed dive time. The gauge mode has a run-timer that counts down in minutes and seconds.

You can download all the information to your PC using the cable and software provided. The Atom 3 gives you so much information that I can't list it all here. It would have been nice to find a summary somewhere in the manual. It's an exhausting read, with no shortcuts, so you have to digest its 150 pages from front to back. Probably many people will own an Atom without ever discovering the limit of its capabilities.

Oceanic OC1 (\$2,150; \$1,500 without transmitter). Rated to 650 feet deep, it can be wirelessly integrated with up to three different nitrox gas supplies according to the number of transmitters employed, and this can



Oceanic Atom 3

Chinese Price Gouging and DCS Too

If you weren't diving recently at Hainan Island, a big Chinese tourist destination in the South China Sea, be thankful. A CCTV.com report found that dive operators and travel agencies were duping tourists into paying way more than normal, raking in sales commissions as high as 80 percent, during the country's Spring Festival holiday last month. They were able to do so by forcing divers to take "underwater photographs."

The diving packages, priced at an average of US\$72, would usually include "some photos," but some operators would often make visitors pay more for separate photo packages that were priced differently, between \$58 for three photos and \$125 for 24 photos. Those who refused to pay for the separate photo packages alleged they were taken into the water "abruptly," without being taught how to equalize when changing depths. "Without learning how to release the pressure every few meters, the tourist would get decompression sickness quickly and request to go back up within just a few minutes," dive guide Wu Jingmin told CCTV. "When they ask why the dive was so short, the dive instructor would say 'You were the one who requested to come up.'"

Officials vowed to punish any tour guides, travel agents and tour operators engaged in price gouging over the holidays, but we think they ought to punish Wu Jingmin, who thinks his tourists are requesting to surface because they have DCS. Please, give us all a break.

include your buddy's main tank. The digital compass must first be calibrated to your global position; this includes declination for a known longitude. That makes this compass slightly more complex to use than similarly-equipped computers. When it comes to those annoying audible alarms, one push button acknowledges and deactivates the current one. The whole lot is contained within a smart titanium case that can be worn as a day-to-day watch.

Oceanic OCS (\$700). This is a simplified version of the OC1 in that it gives no option to wirelessly integrate the tank pressure. Still, it has the same choice of algorithms, digital compass, and can be programmed for up to three nitrox mixes per dive. The OCS is "Firmware Update Ready" with an optional PC interface kit so that you can install operational improvements and future new features.

Other Manufacturers' Computer Watches

TUSA Zen (\$430; www.tusa.com). The algorithm is based on Buhlmann ZHL-16c, which is actually the same as Oceanic's Pelagic Z+ algorithm but with an eye on the European market. It's a development of the ZH-L16 algorithm, used by numerous independent manufacturers, with a good track record for safety. The Zen can be set to default to a worst-case scenario of 79% nitrogen, 50% oxygen, but this will also get the alarms going if you pass 60 feet without setting the actual nitrox mix you're using, although you can turn this feature off. It can be set for normal diving, as opposed to gauge or free-diving mode, and there are settings for the right nitrox mix, a second mix, a no-default O₂ at 50% setting, audible alarms, depth alarm, elapsed-time alarm, a dive-time remaining alarm, a pO₂ setting, on/off modes for deep stops and safety stops, a sampling rate of once every 15 seconds, and a conservative factor.



Tusa Zen

As for reading the display, it's hard to tell whether you're using the computer with gas 1 or gas 2, because this is indicated merely by the position of a little tank icon relative to the percentage displayed. However, the other figures displayed are surprisingly legible. The ascent-rate indicator also builds up as during an ascent (common with computers using this algorithm). The Zen uses one of two ascent rates, according to current depth. The deep stop seemed to make no difference to the no-stop time displayed, and there's no protest if you decide to ignore it; it's set to come on automatically for any dive deeper than 65 feet. If you go deeper than the chosen pO₂ setting for the nitrox mix in use, an alarm sounds, but in decompression mode, the alarm triggers only if 23 psi is exceeded.

You can change gas mixes during a dive by pressing one of the four buttons for the right amount of time. The Zen will allow you to change to a mix at a depth exceeding that mix's maximum operating depth (assuming that you're doing this because the tank with the first gas is depleted), but it sounds an alarm and displays the legend "Do Not Change Gas." You can then switch the alarm off as you make your way up to a safer depth. It seems that the conservative factor, when applied, merely moves the pegging of the algorithm up another 3,000 feet altitude, or twice that if you're at sea level, allowing for a degree of dive-planning using the two mixes' set.

Mares Matrix (\$700; www.mares.com). What makes this smart, full-feature computer watch from Italy unique is that it uses a rechargeable lithium-ion battery, and has an analog display for both time and compass modes that makes reading and understanding figures easier. It's intuitive to set up; it can be set for up to three nitrox mixes (in ascending order of O₂ percentages), and it bases its calculations on a 10-tissue RGBM algorithm specially written for Mares by Bruce Wienke. During a dive, it displays a summary of all and any deco stops required at the press of a button. Gauge and freediving modes are also available.

It charges while mounted into a special dock that has a USB connection for either a computer or a mains converter plug. This gives the advantage of never having to worry about a battery going dead during a dive trip, but you need to remember to recharge it, preferably every night. During a dive, pressing a button will display a current dive profile. Deep stops of one or two minutes' duration can be chosen but aren't mandatory. A three-minute safety stop is always displayed towards the end of the ascent. Like others, it can be used simply for time and depth in gauge mode.

Scubapro Meridian (\$650; www.scubapro.com). Scubapro's long-awaited computer watch is quite brutal looking when compared to others. Its four big buttons stand up loud and proud, and the whole thing is constructed from stainless-steel.

But setup is simple. "ScubA2G" on the display stands for two gas scuba settings. It uses the same algorithm as the Galileo or the Aladin Tech 2G full-size computers, so if you understand either of those, you're almost there. It also uses a modified Buhlmann ZH-8L predictive multi-gas algorithm. You can set one of five micro-bubble levels that come into play during repeat dives, or you can choose to switch off that function altogether, then it performs just like a good old-fashioned Aladin Pro. Set a nitrox percentage for Gas 1 from 21 to 100 percent O₂, with a pO₂ maximum from 21 to 23 psi, or turn that latter function off. You can also set a separate deco gas in the same way, with a choice of mixes of 21 to 100 percent, and a pO₂ range of 14 to 23 psi. You can also set predetermined maximum depth and dive time alarms.

The Meridian can also be used in conjunction with a heart-rate monitor like the Galileo, and it uses a predictive aspect that takes your heart rate into account, and thereby any overexertion you might experience. You can set the 15-foot safety-stop from zero to five minutes, turn off the activation by contact with water (but God knows why you'd want to), and choose metric or imperial measurements. It can also be used in gauge mode or set for breath-hold diving, in which the sampling rate is much more frequent.

When it asks for a level stop to reduce micro-bubble level risks, you can choose to miss it, and it simply reverts to the next less cautious setting. It also gives you the chance to use Profile Dependent Intermediate Stop, Scubapro's own version of deep stops. The Meridian computer calculates a unique PDIS for every dive, or you can turn it off. Its LogTRAK software, with the optional communication cradle (\$130), is compatible with both PC and Mac.

For gas switching during an ascent, it's just a question of pushing the mode button for a second, then confirming the switch with a second push. A little icon of a tank either bears a "1" or a "d." The ascent rate is monitored and displayed as a percentage of the suggested maximum



Scubapro Meridian

at that particular depth. It tells you when to make a safety stop, and time is counted down in both minutes and seconds, which is comforting because whole numbers can seem so long when you're waiting so close to the surface.

The prices of computer watches cover a great range, so it's important to buy the one that does the job you want, and that you understand the differences in the algorithms. If you choose a dual-algorithm Oceanic computer and want to use it alongside another computer you already own, be sure you've got its algorithm set to match. Since most of the European-made computers use an algorithm written by Bruce Wienke, they will all tend to give corresponding diving info. For normal sport diving, any of the less expensive models will do. Choose the one you like the look of and can understand how to set up. And read the manual before you find yourself in deep water.

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

Dead Divers' Bad Mistakes: Part I

like wearing a too-small BC -- or diving without one

Most diving deaths are avoidable. They're caused by bad decisions, diving beyond one's experience, diving with known medical conditions, diving in bad conditions -- problems that might be avoided with just plain common sense.

For many years, we've discussed why divers die, relying in large part on cases presented by the Divers Alert Network (DAN). It has discontinued its reporting, so we are turning to other sources, in this case, DAN's Asia-Pacific division in Australia and its Asia-Pacific Dive Fatality Reporting Project. We hope by explaining these cases, divers will understand better how they might contribute to their own demise, and exercise proper judgment throughout their diving career.

Don't Dive Cold After a Long Break

If it has been a few years since your last dive, a refresher is essential for remembering how to manage your gear and avoid panicking. This 51-year-old man claimed to have made more than 1,000 dives over a 40-year period, but none in the past four years. Despite his claimed experience, he was anxious prior to the dive, and he panicked when his mask flooded underwater. Despite efforts from the divemaster to help him to the surface, he continued to panic and became unconscious before reaching the surface. He began breathing again after CPR was performed on the boat, but he never regained consciousness. He died several days later. Cause of death: Heart failure, likely induced by the stress underwater.

This 29-year-old diver was supposedly experienced, but making his first dive after a long break. He and his dive buddy got separated, but both continued to dive alone. He was found much later floating face-down and without a weight belt. His tank was nearly empty, and there were numerous problems with his gear. He may have panicked underwater and rushed his way to the surface; the cause of death was ruled as drowning due to an embolism.

If you're diving with a new or infrequent diver, make sure your partner is equipped properly before plunging in, and make sure the dive starts well. This 40-year-old diver, who was certified but dived infrequently, apparently had a buddy who left her without telling her. She was seen from the dive boat to descend far too rapidly, and was later found unresponsive at 35 feet. Her mouthpiece

was out, her BCD uninflated, she was overweighted, and her fins had come off because they were too large for her.

Don't Try to Squeeze into a Smaller Size

A BCD or a snorkeling life jacket won't work if it's too large -- you may slip out of it -- or, for this overweight 39-year-old snorkeler, too small. On his first snorkeling trip with a group on the Great Barrier Reef, his rental gear included a life jacket that was too small. The guide helped him zip it up, but he had to exhale to do so. After a short swim in calm water, the group went into a patrolled area with deeper water. Five minutes later, the lifeguard noticed the snorkeler 100 feet from shore, floating face down, motionless, and being carried out with the current. Retrievers found him unconscious and not breathing. Back on the beach, a paramedic was unable to revive him, and he was pronounced dead on site.

The toxicology report showed a high blood alcohol level, which contributed to the snorkeler's drowning. However, that far-too-tight lifejacket, combined with his obesity, restricted his chest movement and breathing. If he couldn't take a deep breath, he probably couldn't clear his snorkel. An ill-fitting lifejacket (or BCD) may not keep an unconscious person's face out of the water.

For Want of a Knife

A 15-year-old boy was spearfishing for octopus with two friends. While 150 feet from shore, he fired his spear at one, but it became stuck under a rock and wouldn't come free. To get leverage, he wrapped the spear line around his right hand. His buddy saw him struggling and kicking, but neither he nor the boy had a knife (the other friend did, but had returned to shore). The buddy unsuccessfully tried to release the line and pull the spear free. While he went to get help, the boy, entangled in the line, was stuck six feet underwater for 15 minutes and drowned. (Editors' note: One can carry a small knife or shears in a BC pocket to prevent being tangled in wayward fishing line or kelp.)

What Were They Thinking?

This 62-year-old woman was so keen to learn how to dive with her new boyfriend, that she walked into a river to practice, wearing her tank and regulator but skipping the fins and a BC. She and her boyfriend waded in neck deep, then kneeled on the bottom and practiced skills. Visibility was just one foot. They were unaware that recent floods had scoured a channel 33 feet deep near the sandy bank. She inadvertently stepped into it and sank. Her boyfriend tried to unbuckle her tank harness, but only managed to release the strap securing the tank. Panicking, she knocked off his mask, making it impossible for him to release the other straps. He tried to support her, but because he couldn't see her in the murk, he exited to get help. Police divers found her the next day. A subsequent test dive showed that a person without fins couldn't swim back to the surface. The tank's weight made it difficult to maintain an upright position with no fins and BC, and would pull the wearer down backwards.

On the big dive day, a diver wore his old set of dentures. That was a mistake . . .

Dentures that Don't Fit

A 60-year-old man in southern Australia decided to do two test drift dives before setting out on a club dive. His buddy noticed that the man looked uncomfortable, and had trouble with buoyancy and orientation. He was wearing dentures and bit too hard on them during the second dive, causing them to fracture. On the big dive day, the man wore an old set of dentures. On the first dive, he was struggling at 60 feet with the same issues as the day before, and used his air supply quickly. Fifteen minutes after descent on the second dive, he surfaced 1,000 feet away, face up with a partially inflated BC, and wasn't moving. He was brought on board unconscious, with froth in his mask, but no dentures, and

died after 30 minutes of life support. It was likely his old dentures were ill-fitting and loose, making it easy for them to fall out while diving. If so, he probably couldn't grip his regulator effectively, swallowed water, inflated his BCD and surfaced with inadequate exhalation, causing pulmonary barotrauma and an embolism.

- - Vanessa Richardson

Next month: Divers who drank and did drugs before dives, and one who sent someone else to a required medical exam in his place.

Hey, There's an App for that Dive

digital dive info worth downloading onto your iGadget

While the jury is still out on how easy -- or useful -- it is to take your iPhone or Kindle underwater for a dive, the smartphone and tablet revolution has expanded to help you plan, execute and even train for dives. The *New York Times* and the Canadian magazine *Diver* recently reviewed several dive-specific apps, and here are the ones we like best.

Dive Log is one of the more comprehensive dive-planning apps at the Apple Store, and worth the \$12 price. A quick tap on the "+" button lets you either enter a new dive in an empty template, or use the last dive's log as a template. The interface for entering dive data is intuitive -- twirl dials to set dive depth, or choose from a pre-populated list of dive types, like "fun" or "wreck." It can even sync with dive logs on your computer, show you your overall diving statistics and keep track of your dive buddies' details. But the app is complex so it's easy to get lost in its menus. (moremobilesoftware.com)

Less pricey is **iScuba Plan**, at \$8. It's based on PADI's recreational dive planner, and supports nitrox and air, repetitive dive and instant switching between metric and imperial. The dynamic interface means real-time feedback on any changes, all with easy-to-read color indicators (<https://itunes.apple.com/us/app/iscuba-plan/id311552098?mt=8>).

The \$1 **DiveMateGPS** is a well-designed dive planner that follows PADI tables for air and nitrox. It plans up to five dives in a sequence, calculating pressure groups for planned dives, pressure groups after surface intervals, max EAN depths, and oxygen exposure of current and previous dives (<http://divemate.01mia.com>).

Diving Dude is a similar experience, but it's free and even has a few social networking features, like seeing your buddies' recent dive experiences in detail. It relies more than Dive Log on icons to simplify logging dive details, like water visibility or weather. But you have to scroll down to the "save" button to save data, a step that is easy to forget (www.diving-dude.com).

If you're an Android user, its free **Dive Log** app also lets you log detailed dive data. Divers who like to keep precise track of their experiences may even prefer it to the iPhone alternative (<https://play.google.com/store/apps/details?id=com.shuffledbits.divelog&hl=en>).

To help with air calculations, **iDive Nitrox** is a simple, no-frills app for \$2. Enter your planned depth and see the calculations instantly. The app immediately gives data max operating depth, contingency depth, equivalent air depth and partial pressure (<https://itunes.apple.com/en/app/idive-nitrox/id311347452?mt=8>).

On Android, the free **Nitrox Calculator** app is similar in function (<https://play.google.com/store/apps/details?id=eu.Docking.Nitrox&hl=en>).

There are not many marine life ID apps with substantial content, but here are two worth downloading for your iGadgets. **Reef Critter Hawaii** downloads 374 invertebrate species, and each image is accompanied

by a small description, organized by species family and comes with links to external video content. **Reef Fish Florida and Caribbean** settles those post-dive discussions about angelfish versus emperor fish with 400 photos and descriptions, written by marine life experts. It also comes with links to external videos, and options to store your favorites. Each app is \$5 (<http://indigo.malinowski.com>).

For knowledge of worldwide tides and currents, **Marine Tides Planner** has a long list of global ports, and delivers tide predictions with clear charts and numerical tables. Its map interface for selecting locations is confusing, but you can mark locations as favorites. The app is free for basic tide predictions, but for more precise tidal calculations, there's an in-app purchase option that requires you to pay for extras, ranging from \$1 to \$4, that make calculations accurate for tidal predictions (<https://itunes.apple.com/us/app/marine-tides-planner/id317900837?mt=8>).

On Android, the free **Tides & Currents** app does an equally fine job of predicting tides in the near future. It has a slightly confusing alphabetical list of locations, but you can configure it to report ports nearest to your location (<https://play.google.com/store/apps/details?id=com.tideandcurrent.app&hl=en>)

If you need a refresher on what sign to use for "going up" versus "going down," **Dive Signs**, at \$1, features more than 170 international scuba signals, categorized into three sections, with options to make favorites. Computer animation in 3D lets you visualize the basic signs, but not all of the signals match what's taught by PADI (the developer states that they are from the U.S. Navy Diving Manual). (<https://itunes.apple.com/us/app/dive-signals/id331024725?mt=8>)

If you want to take your iPhone apps underwater on dives, **iGills** promises to let you. A cross between software and hardware, the \$330 iGills is a 130-foot depth-rated iPhone housing, with built-in depth and temperature gauge. Download the app, plug in your iPhone and it becomes a dive computer, digital compass, and still and video camera. It even automatically adds your dives into a log book (www.igills.com)

Don't Call Them "Shark Attacks" Anymore

Now, Christopher Neff of the University of Sydney in Australia and Robert Hueter, leader of Mote Marine Laboratory's Center for Shark Research in Sarasota, FL propose a new system of classification to support more accurate scientific reporting about "shark interactions." Their study, published in January in the *Journal of Environmental Studies and Sciences*, analyzed shark statistics worldwide and found the term "shark attack" misleading in many cases. For instance, a 2009 government report from New South Wales, Australia, documented 200 shark attacks, but 38 of those involved no injuries to people. In Florida, often called the "Shark Attack Capital of the World," only 11 fatal bites have been recorded over the past 129 years, a lower number than several other locations in the world.

"Not all shark 'attacks' are created equal, and we certainly shouldn't call bites on kayaks and bites on people the same thing," says Neff. Hueter adds: "Nor should we equate the single bite of a two-foot shark on a surfer's toe with the fatal bite of a 15-foot shark on a swimmer, but that's how the current language treats these incidents."

To support more accurate reporting and discussion of shark incidents, the Neff-Hueter study groups them into four categories based on outcomes that can be clearly documented. These include:

Shark sightings: Sightings of sharks in the water near people but with no physical contact.

Shark encounters: No bite takes place and no humans are injured, but physical contact occurs with a person (say a shark bumps a swimmer and its rough skin causes a minor abrasion) or with an inanimate object, such as a surfboard or kayak

Shark bites: Bites by sharks that result in minor to moderate injuries.

Fatal shark bites: One or more bites causing fatal injuries. The authors caution against using the term "shark attack" unless the motivation and intent of the shark are clearly established by experts, which is rarely possible.

"These new categories provide better information to the public so they can judge risk levels based on local shark activity," Neff said. "If 'sightings' of sharks are increasing, or if 'encounters' with kayaks are decreasing, these are important pieces of information. There simply is no value in using 'attack' language. It's time to move past *Jaws*."

Flotsam & Jetsam

Another Place to Recycle Dive Gear. After writing about where to take old equipment when you're done with it, *Undercurrent* readers are popping up with more places to sell stuff to. The latest is from David Steinberg, who recommends Discount Divers Supply in Seattle. Box up your equipment and ship it to the shop, which will give an estimate once the package arrives, and can offer cash or credit. They're looking for quite an assortment of stuff, including non-working rebreathers and antique dive gear (www.discountdivers.com)

Witch-Burning Alive and Well in PNG. Papua New Guinea is safe enough -- if you're headed straight to your dive resort. In her review of Walindi Plantation last October, our reporter described the arrest of 29 cannibal cult members in the Western Highlands for eating raw human brains. That region is in the news again after a mob stripped, tortured and bound a woman accused of witchcraft, then doused her with gasoline and burned her alive on a pile of tires in front of hundreds of people last month. Kepari Leniata, 20, was accused of sorcery by relatives of a six-year-old boy who had recently died; the connection between the two is unclear. The country's big newspapers printed grisly photos of the burning on their front pages. Police were outnumbered by the mob and couldn't save Leniata. The United Nations said the killing "adds to the growing pattern of vigilante attacks and killings of persons accused of sorcery" in PNG.

Does Wine Age Better Underwater? Mira Winery of Saint Helena, CA, is testing that theory by submerging four cases of 2009 Cabernet Sauvignon in Charleston Harbor to see how the ocean affects the aging of the wine. Some European wineries have produced underwater-aged wine, but it's still a novel idea in the U.S. Winemakers have long known that wine recovered from sunken ships has a unique taste,

and the ocean is thought to play a role, but Michael Kaiser, director of communications for the National Association of American Wineries, suggested that wine recovered from ships may simply taste better because the wine is really old. Once Mira's wine is pulled from the ocean in late May, it will be chemically compared to wine aged in a cellar, then tasted and compared by wine experts.

First It Was Lionfish . . . Now it's giant goldfish that are the latest threat to marine life. Biologists with the University of Nevada at Reno are finding a growing number of them in Lake Tahoe, probably due to people dumping their aquariums into the lake. Some of the goldfish have grown to 18 inches, and they pose a threat to the lake's ecology because they eat a lot, creating competition for native trout, and excrete "lots of nutrients" that stimulate algae growth. There have been no prior studies on goldfish, so researchers are catching the giant fish and bringing them back to the lab for research.

Join the Search for Treasure. In 1985, Mel Fisher found the Spanish galleon *Nuestra Señora de Atocha*, which sank in 1622, 35 miles southwest of Key West and 55 feet deep, and he uncovered an estimated \$500 million of treasure. But there's still more to discover, and the late Fisher's family is offering divers the opportunity to help professional salvage experts during week-long dive trips between June and August. You'll be searching for the ship's sterncastle, as well as the gold and silver bars and coins listed on the *Atocha's* manifest that are still missing. Anyone who discovers something precious will be awarded previously conserved *Atocha* pieces of equal value, up to \$2,500. The trip cost, including lodging, is \$2,500, and trips are limited to six divers (www.melfisher.com).

Good Job, Indonesia. Last month, government officials announced the opening of a new shark and manta ray sanctuary in Raja Ampat, the first of its kind in the Coral Triangle, which will measure 18,000 square miles. The government also issued guidelines to abolish the fining and fishing of sharks in the area.

Undercurrent is the online consumer newsletter for sport divers that reviews scuba destinations and equipment. We accept no advertising, and have published monthly since 1975.

Letters to the Editor/Submissions
EditorBenD@undercurrent.org

Editorial Staff
Ben Davison, Publisher and Editor
Vanessa Richardson, 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

undercurrent

March 2013 Vol. 28, No. 3