



Buddy Line

June, 2006

Reducing Stress and Gliding into Rescues: *NCRD Class is a Success!*

by Joseph Kaminski

Photos by Karen Doby

Memories are still vivid in my mind from my very first scuba diving course in 1975. Our college instructor, a former U.S. Navy diver, had four of us Open Water students buddy-breathing on one regulator as one of our class exercises at the bottom of cold Puget Sound. Well, talk about trying to control one's stress! Being a new diver, having a leaky mask, trying to find enough air in my lungs to blow those tiny bubbles were just a bit too much. I thought that air sucker would never come around! Eventually I had to surface, and despite being "all choked up", I remembered my dive physics and kept blowing out the air I "didn't have left" upon ascent. Fortunately, I survived a potentially very dangerous situation that had developed.

Thankfully, scuba diving instructional methods have changed a lot in the past 30 years. On April 11-15, five NCRD members took the SSI Diver Stress / Rescue course taught by club instructor **Maureen McEvoy**. Divers **Claudia, Ralph, Larry, Gabriel** and **Joe** completed a classroom and pool session in San Carlos, then met early April 15th under clouds and light showers yet calm Monterey Bay Breakwater seas. The course was directed at assisting ourselves as well as other recreational sport divers. Reviewing basic skills such as mask clearing, regulator retrieval, and weight and equipment removal and replacement

on ourselves and dive buddies is always good practice.

The class began with a basic discussion of stress. Stress is human, learned, social and personal. Since scuba diving is not a competition to be won or lost, but rather an activity that should be fun and pleasurable, the course conveys that the best way to enjoy the entertainment and beauty of diving is to acknowledge

having the proper skills, and using good quality and well-maintained equipment will help divers stay a step ahead of stress. Levels of confidence and enjoyment will increase.

Remember the familiar saying, "if you are uncomfortable with the conditions for any reason, choose not to dive, change the diving location, or change the conditions." There could be a malfunctioning valve on a buoyancy compensator, medical concerns with you or a dive buddy, hazardous environmental or weather conditions, or a tendency to succumb to peer pressure to dive when something just doesn't feel right. Knowing



Congratulations to four newly certified Rescue Divers, from left to right: Joe, Gabriel, divemaster Ralph, instructor Maureen, Larry & Claudia at the PG Hyperbaric Chamber

any stress, get to the root of what is causing it, confront it and proceed from there. According to the *SSI Dive Stress and Rescue Training Manual*, stress usually originates in divers from five reasons: physical causes, psychological causes, equipment problems, environmental conditions, and lack of skill. Some stress-producing situations are unpredictable, but others are functions of our own personal preparedness. Being healthy,

the causes of stress helps us to recognize it and prepare for how best to react. The course addresses how to deal with stress during the three different stages of a dive.

Mental, visual, and physical rehearsal were advised during the course. This will

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Editor's Log: *Dive Safety*


by Karen Doby

She was everything I ever wanted — tall, trim, light-weight. I watched as the dive-master slipped my BC over her shiny new valve. He connected my reg and cranked on the air to test the pressure. “Great fill,” he smiled, “3150,” and jumped down off the bench. I moved in closer, and my heart sank as I heard the faint but unmistakable hiss of air from the new neck seal. “It’ll be OK, just leave the valve off until we get to the dive site,” the DM advised. Just what I need, a known leaky seal in my air supply. “I don’t think so,” I countered. “Really, it’ll be OK. Just relax; you’re on vacation. Let me do all the work,” he reassured me. I crossed my arms and threw him my finest Xena Look of Death. I wasn’t going

to budge. “OK, I’ll swap it out.” Good boy! Where are dog biscuits when you need ‘em?

By the end of the dive day, that tank had been retired after two other divers had to cut their dives short. The DM’s had insisted it was fine because the tank had just come back from service the previous day, but finally they conceded something was wrong. This emphasizes that dive safety cannot be taken for granted; it’s everyone’s responsibility.

In this issue, safety is the central thread, beginning with Joe Kaminski’s entertaining report on the NCRD Dive Stress and Rescue class. Peg Stone’s moving account of a deep dive and the Dive Nerd’s address of “is diving safe?” are good reminders that safety should always come first.

This issue also marks the introduction of a new column, “Meet Your Dive Buddy,” from Dennis Nix. In this forum, we hope to put several members in the spotlight as a human interest feature. Finally, don’t miss David Zippin’s enthusiastic review of the new book, *Nudibranch Behavior*. 

Wrecks to Reefs!


Upcoming NCRD Meeting on June 15, annual BBQ on July 9

by Peg Stone

Bob Sommer, assistant instructor and NCRD class coordinator, will brief us on an exciting and well-organized new project to sink an old Navy ship in Monterey Bay. While Canada has taken the lead in turning wrecks into homes for underwater critters and San Diego has the Yukon and other wrecks, we in Northern California have lagged behind. Turning a moth-balled ship into safe-to-sink condition and safely sinking her top-side-up at the right depth for diving are fascinating and challenging! And, it costs a bundle.

Come hear about how this feat will be accomplished and how you can help! We will be at the LGBT Center, 1800 Market, on Thursday, June 15, at 7pm to visit with new and old friends, and the meeting will start at 7:30pm.

Tips: There are good, cheap eats in the café at the Center if you want dinner beforehand and almost no parking nearby, so public transit is strongly recommended. Also, we’ll distribute more of NCRD’s famous door prizes! Don’t be left out!

Remember, on July 9, we’ll have our annual BBQ and swap meet in Palo Alto. Come and meet prospective new members, get (or give) some fantastic “steals and deals” on scuba gear, and dig into some great chow with old and new friends! 

Northern California Rainbow Divers, Inc.
a California non-profit mutual benefit corporation

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CLUB POLICIES

Board meetings are held once a month and are open to any member in good standing. If interested in attending, please contact any of the Board members listed above for location.

Membership dues are \$35/year, \$55/year for domestic partners at the same address, and \$20/year for a newsletter-only subscription to addresses >150 miles from the SF Bay area.

Advertising is available for \$7/month to club members for a business card-size ad, or for \$10/month for non-club members. If you are interested in advertising, please contact the editor. NCRD does not warrant, recommend or guarantee the products or services contained in advertisements in this newsletter.

Unless otherwise noted, all monies paid for club-sponsored events are non-refundable.

NCRD's Monthly Photo Contest Winners Announced

For March and April, 2006

In March, **Greg Hamman** was diving in the Cayman Islands aboard the *Cayman Aggressor IV* liveaboard when he spotted this Peppermint Bass peering out from under a ledge. Of this shot taken with a Sony N1 compact camera, Greg says, "After diving the Caribbean for ten years, I only just learned about these colorful little fish and how to scout them under little ledges in the reef."

April's prize goes to **Ralph Wolf** for his photo of a toadfish spotted under a ledge in a sand channel in Roatan during NCRD week with Lambda Divers at Inn of Last Resort. Ralph used an Olympus 7070 with wide angle adapter and dual YS-90DX strobes through a TTL converter.

The deadline for submitting May photo entries is June 5, and for June the deadline is July 5; details are available online at the NCRD website: www.rainbowdivers.org/photocontest.php

For their winning images, Greg and Ralph win a \$10 credit toward any NCRD event of their choice.



MARCH WINNER: Peppermint Bass

Photo by Greg Hamman

Annual SCUBA Show

Coming Soon! June 24-25

Warm weather is finally here, which means THE Diving Event of the Year™ is close at hand — the SCUBA Show 2006. It will once again return to the Long Beach Convention Center over the weekend of June 24-25.

The SCUBA Show 2006 is a good place to become dive-educated and inspired, plan your next dive trip, meet old friends and make new acquaintances. This year's show will host

- 57,000 square feet of exhibits of new gear, dive experts and dive travel pros, many offering good prices and great bargains;
- in-water demos and trials;
- continuous underwater Film Festival;
- full schedule of seminars;
- door prizes;
- Saturday night casino party benefit.

For info and advanced registration, visit <http://www.saintbrendan.com> to take advantage of early discounts.



APRIL WINNER: Toadfish

Photo by Ralph Wolf

Mistakes at a Pinnacle

by Peg Stone

The last day of diving on the *Vision* liveboard broke clear and calm. I stood sweltering in my drysuit, eager to do an advanced dive on a great pinnacle. “I’m not quite ready, and then they have to hand me my camera gear,” my buddy said. He looked at my sweating face. “You go ahead with the other two, and I’ll catch up.” I hesitated at the thought of breaking up the planned foursome and leaving my buddy on his own. I thought of the pinnacle sixty feet below, the clarity of the blue water by the boat, the lack of surge and current. I thought of my buddy’s fast air consumption and my slow air use. I thought of all the dives I’d done this trip with newer divers, coming back onboard with a half a tank of air or more. Hadn’t I been good enough for one trip, I whined to myself? “OK,” I said, and shortly after that, stepped off the *Vision* and into the deep blue sea.

The three of us followed the anchor line down, and when the steep pinnacle emerged from the blue, swam over to it. We started a bit below a hundred feet and began to wind clockwise and up, more than a little narked

and delighted with the wealth of invertebrate growth and nudibranchs. As we came around the pinnacle, I became mindful of the continuing decline in my “minutes until decompression dive” indicator. The top of the pinnacle barely reached sixty feet. I realized that I would be pushing to the very edge of my deco limits before heading up. Where was that anchor line? It draped across the lower shoulder of the pinnacle – already well below me. Both ends trailed down into unseen depths and I could not tell which end led toward the boat. As we were among the first divers in the water, I looked for other divers descending, and to my surprise saw their bubbles at right angles to the drape of the anchor line, well off the lower shoulder. “Lousy job of hanging the anchor,” I thought to myself, ticked off at the young captain, who had taken a full hour to achieve this messy setup.

I saw my buddy down below but couldn’t go down to join him without going into deco. True to form, he was concentrating on taking a photo of some marvelous small critter down there. He didn’t look up. I continued to wind around the pinnacle with my guys, edging upward to keep out of deco, until my computer told me I had less than two minutes before it would require a mandatory deco stop. We had hovered at the pinnacle top for the last several minutes already. I motioned with my hands to my closest buddy, “I’m going back to the boat.” He signaled OK, and I set off into the blue, not seeing the anchor line but knowing that I’d seen divers descending in that direction twenty minutes before. I carefully watched my depth,

slowly rising as I kept my heading. Then suddenly a thin white vertical line emerged from the endless blue. I hit the anchor line at about 50 feet with my two buddies right behind me. I looked for my “real” buddy but couldn’t see him.

I did five minutes at 50 feet, my usual practice of making a second stop at half my maximum depth on deeper dives, followed by another five at 15 feet, looking for my buddy the whole time. Others came up and passed me as I idled beside the line, practicing my buoyancy. No luck.

So we came up, raving about the great conditions and the terrific fish and critters we’d spotted, excited at the prospect of possibly squeezing in another dive on this pinnacle. I talked to the captain about it, but others had chosen to sit out the dive entirely, deciding the site went too deep for their level of skills. The three of us made agreeable and complacent sounds and then went to the hold to strip off our drysuits and complain bitterly amongst ourselves about how this was “the perfect first deep dive” for newer divers and these weenies who were missing the best dive of the trip.

I came up on deck to find that my buddy had surfaced in violation of his computer. He had missed the ascent line, done a free ascent but completed only eight minutes of his ten-minute mandatory stop at 10 feet before he ran out of air. He felt fine, and he shrugged the incident off as he tended to his camera. “I’m done for the day,” he said. And it was the last day of the trip, no big loss.




Computers offer a safe and convenient way of monitoring decompression limits during a dive and can be mounted on your wrist, a hose or a console. No matter what type of computer you use, be sure to understand its operation, displays and audible alarms before entrusting your safety to it in the water.

Soon, I found that at least two other divers, both with over 100 cold-water dives, had also entered deco status. Both had descended at the end of their dives while trying to follow one end of the visible anchor line back to the boat, failing, and coming up via free ascents. With no current, rising without an anchor line created no problems for them, but one had an 18-minute deco stop, which he completed, while the other had briefly slid into deco status that cleared as she ascended, so she did not have to do a mandatory stop (although she did a long safety stop as usual). Since she rarely if ever had seen her computer go into deco, she wasn't sure she had even crossed the line, but as we used the same computer model, I realized her description of the computer reading described a brief mandatory stop requirement. I had seen my computer clear out of a mandatory stop requirement during a slow ascent a couple of times in

Cozumel on divemaster-led dives (at least that's my story, and I'm sticking to it).

I felt pretty bad; I had come up with my usual half a tank of air while my buddy ran out. I had derided (albeit in private) the judgment of the newer divers, out of my own greed to dive a great spot again, when very experienced divers had unintentionally tumbled into decompression dives.

What lessons can be learned? Well, my little trick of finding the anchor line by looking for the bubbles of divers descending after me (or ascending before me) saved me a lot of grief, what with that deceptive lie of the anchor line. Waiting till the end of the dive to figure the situation out could have caused a very big problem. I also learned that a buddy who takes responsibility to "catch up" won't, especially if s/he is a photographer. S/he may volunteer to dive solo, but as a good buddy, I shouldn't accept.

My new rule: extra air is to share. And I have learned to be more humble: good, experienced divers can end up with unexpected problems, even in pretty good conditions. And deep sites are a challenge even in the best of circumstances – they require extra planning and alertness just when a diver is narked to the gills and least able to think clearly. And, speaking of humility, I'm glad I kept my carping private among buddies who understood my intentions: venting frustrations more than actual criticism of a diver's decision. Finally, there's a lot of pleasure in being a good buddy and a lot of anxiety in being a bad one. 

Diver Stress/Rescue...

(continued from page 1)

come naturally to anyone who enjoys meditation and visualization. Over-learning of skills is recommended. The more we do them, the more likely the skills will be practiced automatically. We divers are also instrumental in calming other divers and preventing panic. A good diving companion will create a sense of trust and ease through communication, encouragement, support and respect. Communication through physical and eye contact is very beneficial. It may help us to relax more as well.

Even when divers are prepared and perform skills well, sometimes things will still take the route of “Murphy’s Law” and move in unexpected, challenging directions. That’s why we practiced throwing a surface float, towing a tired diver using four different techniques, releasing a cramp of our own or a dive buddy’s, and ditching gear that hinders a tow. Procedures to protect ourselves and perform a buddy assist were reviewed and practiced. We learned that buddies usually like the side-by-side or “do-see-do” tow because it brings us “up close and



Ralph and Joe try out the chamber



Meg Donat explains the recompression process

personal,” providing additional support and security as we give kind words of encouragement and assurances that we are committed to stay with the diver until we arrive at the boat, shore or pier. Although brief, it’s a special but important kind of “water-courting” relationship.

Our last open water scenario was a “missing diver” that all of us participated in with our own plan and role simulation. Larry and Joe went to “rescue” Ralph while observing Claudia’s signals from shore for guidance. Ralph was carefully brought to the surface with care to monitor ascent rate and buoyancy. Ralph momentarily pulled a fast one and transitioned from missing unconscious diver to a suddenly conscious and very excited diver. We were told to expect anything! A saddleback carry was used to bring the rescued diver to shore, and Claudia had the Oxygen and First Aid box waiting for us when we arrived to simulate checking ABCs and CPR. Meanwhile, emergency medical personnel were summoned (in simulation). To show how seriously people do view this, a very concerned woman up near the stairs called to us to ask if we needed to have 911 called for our diver. It’s good to know that people are ready to help at a moment’s notice. Performing “Accident Management” at a scene and requesting or assigning help is part of the Diver Stress/Rescue course.

Later, we headed over for a tour of the Pacific Grove Hyperbaric Chamber. **Meg Donat**, a nurse and chamber volunteer for many years, described how the equipment works with its multiple gauges and dials. A small six-foot chamber, previously in

use until 1984, bears scores of engraved pictures on the outside that indicate divers either bent over (Bends) or inside of a bubble (Air Embolism). Due to the extremely tight space, about 12 hours was all anyone could handle inside of that chamber. The newer one contains two beds, water bottles, energy bars, headphones, urinals, and emergency medical kits. Both are unisexual, and no one can expect very much privacy once inside.

Technology has even changed for hyperbaric treatment. In the past, a diver may have been taken back down to an equivalent of 160 feet, but Meg explained that nowadays a diver is recompressed only as deep as 60 feet, regardless of the diver’s actual dive depth, and is gradually brought back up to 0 feet in generally about five hours. Oxygen is a very important key in medical and hyperbaric use. In fact, research shows that cancer patients can experience great benefits from hyperbaric chamber treatments. Business has been slow in 2006, but Meg said cases come in waves. I was surprised to learn that the highest percentage of chamber treatments are for *advanced* scuba divers, especially instructors doing “yoyo diving” in student training classes.

Several of us carefully entered and looked around inside, bought T-shirts to help this volunteer cause and pondered over what a highly important tool this is for divers and the fine non-profit service they provide. Thanks go to Maureen for instructing the course, Meg for providing an excellent chamber tour, Ralph for setting up the tour and everyone who participated and gave their all.



The old six-foot hyperbaric chamber, used until 1984

Book Review: *Nudibranch Behavior*

by David Zippin

Nudibranch behavior? Isn't that an oxymoron? The new book, *Nudibranch Behavior* (New World Publications, 2005, \$34.95) by the renowned expert **David Behrens**, does an excellent job of proving otherwise. This compact book of 176 pages actually goes beyond just behavior and covers nine subjects, only five of which could be considered behavior: senses and reproduction, locomotion and movements, feeding, reproduction, and defenses. Other topics addressed are classification; colors, camouflage, and mimicry; relationships; and sea slugs and mankind. Although these subjects may sound like the contents of a textbook, *Nudibranch Behavior* is a good read.

First, this book is beautifully assembled. The pleasing, accessible, and easy-to-read layout will be familiar to many divers who own fish and invertebrate identification books by Paul Humann and Ned DeLoach; both are editors of *Nudibranch Behavior*.

The highlight of the book is the stunning photography by Constantinos Petrinis and Carine Schurrs. Freed from the constraints of showing nudibranchs from a particular region, the photographers have clearly selected the best of the best to illustrate nudibranch classification, anatomy, and behavior. For example, have you ever seen a nudibranch clinging to the lip of a frogfish? Or a *Dendronotus iris* (a large nudi we have in Monterey) eating a tube-dwelling anemone, its favorite prey? Or an action sequence of one nudibranch chasing and eating another? It's all there, and the photos alone make the book a worthwhile purchase.

While diving in Maui, I interviewed **Pauline Fiene**, co-owner of Mike Severns Diving and an expert on nudibranchs, about David Behrens' book. Pauline has over 5,000 dives to her name and has discovered many nudibranchs new to science. "I couldn't believe there's that



Tritonia Festiva

Photo by David Zippin



Spanish Shawl

Photo by David Zippin



Hopkin's Rose
(Hopkinsia Rosacea)

Photo by David Zippin

much behavior to write about", she said, and praised the book for its excellent photography. "My favorite section was on eggs. There's an unbelievable variety of nudibranch eggs." The section on reproduction had another section of interest to Pauline: "Something everyone should see once is a nudibranch penis — it's a little spiky." Pauline has a contagious enthusiasm for underwater creatures, and she was particularly excited about *Nudibranch Behavior*.

My favorite chapter is also the shortest. "Sea Slugs and Mankind" (the editors are clearly all male!) describes some of the strange uses for nudibranchs. Many branches of biology have their star study organisms: Evolutionary geneticists have the fruit fly *Drosophila*, plant geneticists have the mustard *Arabidopsis*, and physiologists have the rhesus monkey and house mouse. A nudibranch is also on this star roster. The California seahare, *Aplysia californicus*, is raised by the thousands for neurobiologists from around the world to poke and prod. Apparently, this attractive seahare has the distinction of having a few oversized neurons that are perfect for the study of brain function — great fodder for your next dinner party when someone asks, "Is that a picture of a fungus or a bird dropping?"



Utila Whale Shark Research: *Building an International Identification Library*

by Karen Doby

The largest fish in the sea, found in lengths up to 60 feet and weighing over 45 tons, whale sharks are among the most mysterious. Amazingly, little is known about these graceful, gentle giants – how many live in the world’s oceans, how long they live, where they breed, even how they give birth. We do know that they tend to be solitary dwellers and spend most of their time in warm waters near the surface, constantly feeding. Although their mouths are lined with three thousand very tiny hooked teeth on both jaws, whale sharks neither chew nor bite their prey, preferring instead to filter-feed on large concentrations of zooplankton, squid, and small fish, sieved through the fine mesh of their gill rakers.

Whale sharks are slow swimmers, cruising no faster than 3 mph, yet are thought to be highly migratory. Where they come from, where they go and why are still mysteries to this day. To help solve the enigma of the whale shark, the owners of Deep Blue Resort have embarked on a five-year scientific endeavor in partnership with ECOCEAN to populate the world’s only international whale shark database and library as a first step toward enabling research on these animals.

Where does the data in the whale shark library come from? Enter **Jasmine Dale**, co-owner of Deep Blue

Resort in Utila, Honduras. A quiet, hard-working woman who spends most of her days overseeing operations in the resort’s kitchen, Jasmine is one of the most important people on the island to Deep Blue’s 20 guests. For whale shark research, though, Jasmine is virtually indispensable as the one person who single-handedly ID’s and catalogs whale sharks sighted in Utilan waters.

“I’m the only person outside of ECOCEAN who has direct access to the DB to post information on whale sharks,” she says. “The idea is that eventually, there’ll be people like me all over the world, processing whale shark sightings in their local area. For now, I’m the only one.”



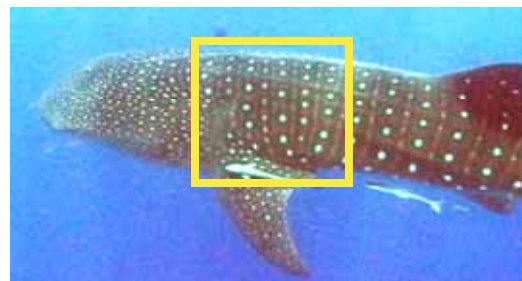
Jasmine Dale

of Deep Blue Resort using non-invasive methods that are safe for both sharks and humans, that are also scientifically usable and useful. How is this done, exactly? Scientists have determined that the spot pattern on each shark is unique to that individual and does not change over time. This patterning, in combination with scars on the animal’s body, makes it possible to uniquely identify individual animals using photo identification methodology.

Because whale sharks are not aggressive, posing no threat to humans and generally sporting indifference toward scuba divers, it is possible for snorkelers and divers to photograph the shark from a respectful 10-foot distance that minimizes “trap response”, the tendency for a whale

An avid conservationist and SCUBA instructor, Jasmine, along with **Steve Fox**, sponsors whale shark research for one month a year out

shark to dive and/or swim faster when it feels harassed at the surface. This in turn allows the diver to spend more time with the shark, hopefully getting better photos.



The area used for uniquely identifying whale sharks

The zone of interest in photographing whale sharks for identification is a square area on the left side of the animal’s body, bounded horizontally by the last gill and extending backward past the left pectoral fin, and vertically from the top of the left pectoral fin to the central dorsal ridge. This area is indicated by the yellow box in the photo above.

Although left-side identification is preferred, sometimes an animal can be identified from the same area on the animal’s right side. “Sometimes we have sharks that have been photographed on both sides, so if we get a right-side match on an animal that has had both left-side and right-side identification, we know which shark it is,” explains Jasmine.

What doesn’t work for shark ID are those artsy portrait shots that photographers often try for, that highlight the face or eye, or use unusual angles or perspectives. To be scientifically useful, the photograph should focus on the area shown above, preferably on the shark’s left side, and be taken as much as possible directly perpendicular to the shark’s body.

This then allows Jasmine to use state-of-the-art computer-aided identification methods to compare the spot pattern of the sighted shark to others in the library. First, she orients the photo such that the shark’s back is parallel to a horizontal lie,

Meet Your Dive Buddy: *Kathi Doster, NCRD Member Since 2001*

by *Dennis Nix*

Photo supplied by *Kathi Doster*

Buddy Line: Kathi, you've been a pretty active diver and NCRD'r. How long have you been diving and what got you started?

Kathi: I do lots of other outdoor activities — kayaking, canoeing, camping — so diving was a natural. When I went snorkeling in Hawaii in 1992, I saw all the fish down there and thought, "I'd love to be right there with them." I got certified as soon as I got back to the mainland. NCRD membership was also a natural. I saw the NCRD booth at Pride and signed right up. I've been an active member of the club and a board member. It's been a great experience.

Buddy Line: On a more personal note, is there a special dive buddy in your life?

Kathi: There is now. My partner Anne was recently certified in Monterey. We're off to Utila, Honduras, for a week long diving trip in May. Anne's certification and early dive experience is so different from mine, which was done in a quarry outside of St. Louis. When we'd do a wreck dive, the wreck was a car!

Buddy Line: Where do you like to dive?

Kathi: My favorite dive site would be Cozumel. It's full of big critters, swim-throughs and a huge variety of coral. I also love diving wherever DFL is held.

Buddy Line: Where are you planning to dive next?

Kathi: Now that Anne's certified, we've scheduled a number of trips. As I mentioned, we're going to Utila in May which is a trip with GLUG (Gay and Lesbian Underwater Group from UK), Wakatobi with NCRD, and Saba in the Netherlands Antilles at the end of the year. We won the Saba trip at a DFL auction.

Buddy Line: Sounds like lots of great diving. Do you have time to do anything else?

Kathi: Yes, I still find time for my other hobbies. I enjoy making jewelry.

Buddy Line: I also understand you have an unusual stamp or art collection?

Kathi: Well, it's not exactly stamp collecting. One of my passions is collecting



Kathi Doster and friend

Japanese women warrior woodblock prints.

Buddy Line: Kathi, thanks for your time and sharing a little bit about who you are above and below the surface. Have a great time on your upcoming trips.



The shark's highlighted dot pattern is computer-matched to known animals

then crops the area of interest. From this point forward, her trained eye is most critical — Jasmine then looks at the spot pattern and

decides which of the spots are to be highlighted for comparison to known patterns. She increases the contrast between dark and light, and the result looks like the picture above.

If you notice a striking resemblance between this image and the nighttime sky, this isn't coincidental! The triangulation

software used for computer-aided pattern recognition of whale sharks was in fact originally designed for astronomers seeking to identify constellations using star patterns of white dots against a dark sky.

The final step is human verification. Jasmine looks at the patterns offered by the computer as a closest possible match and makes the final decision as to whether or not it is the same animal. If it isn't, she enters the encounter into the library as a "new" shark, otherwise, as a recent sighting of one previously catalogued. To date, 34 different whale sharks have been identified in Utilan waters since this project began in 2005.

Divers who contribute photos in which a whale shark can be identified will then receive an email every time that same individual is sighted. In this way, divers

could follow its migration as to where and when it is spotted again.

Other methods of tracking whale shark migrations, such as spearing the animal with plastic ID tags or satellite tracking devices, have not proven effective long-term and damage the shark.

This important work done by Jasmine for ECOCEAN is a crucial first step in gathering data that helps solve the riddles of the biggest fish in the sea. Online links to the whale shark library can be found at these URLs:

<http://www.deepblueutila.com/>
<http://www.ecocean.org/>



Dear Dive Nerd



Ever had a dive-related question but didn't know whom to ask? One of our long-time, seasoned divers and divemasters extraordinaire is now available to help! No question is too silly or difficult for our dive nerd. Give it a try! All questions may be sent to DiveNerd@rainbowdivers.org

Is diving safe?

The short answer is "No", in that nothing is completely safe. Even if you never leave the sofa, you run the risk of obesity and heart disease. Of course there is some risk with diving! A better question is "just how safe, or unsafe, is diving?"

I'll try to answer this question and put the risks of diving into a rational perspective. If I do this right, I won't cause needless anxiety or a false sense of security with my answers. This is just my opinion, and you should decide for yourself if it's worth the paper it's printed on.

It's very difficult to get a straight answer out of the diving industry on safety. No less of an authority than Divers' Alert Network (DAN) has tortured statistics into showing that diving has the same "incidence of accidents" as bowling (about 0.04%, *Alert Diver*, March-April, 1992). They got this result by looking at the number of reported injuries as divided by the number of "participants" (I think they mean dives, not divers). In

any case, I've done my share of bowling, and I've *never* been asked to sign a liability waiver or show a C-card to prove I know how to bowl. That alone should tell you something about the relevance of DAN's statistics.

The DAN article's downfall is that it neglects to consider the seriousness of the reported incidents. I simply can't imagine how an otherwise healthy person could get themselves killed bowling. But, unfortunately, fatalities in diving are a risk that must be recognized and minimized. The thing that sets diving apart from other sports like bowling or skiing is that there is a very fine line between "close call, but nothing happened" and "somebody died". In this way, diving has a lot more in common with flying an airplane than with sports like bowling, skiing, or tennis. Given this reality, divers are wise to err on the side of caution! When it comes to dive planning or deciding to abort a dive due to an unexpected situation, most experienced divers have learned to put their ego aside and listen to their inner chicken. They know to start listening early, too.

But what are the odds really? Can we get meaningful statistics out of DAN?

Well, yes, and no. The trouble is in getting the raw data. It's easy to count up the number of serious injuries and fatalities, but how do you count the number of uneventful dives? Without an accurate number there, you can't get an accurate accident rate. However, I did notice that in 2003, there were ~5 fatalities during open water training, while DEMA reported ~173,500 C-cards were issued in the same period. If we figure 4 dives per C-card, the fatality rate during Open Water training, is *roughly* 1 in 140,000 dives. What that means for regular open water dives is anybody's guess.

It's important to remember these accidents aren't random. Diving is not like playing Russian Roulette with a 140,000 chambered revolver! We can think about

the accident reports (plus any situations that make our inner chickens squawk) and learn from them.

If you are a DAN member -- and you should be -- you can log on to their website and download their *Annual Report on Decompression Illness & Diving Fatalities*. The most recent report covers accidents in 2003. Excluding commercial divers, free divers, and non-US/Canadian citizens, DAN was notified of 109 dive fatalities in North America that year. Detailed analysis is only possible for 89 cases though. I can't summarize the whole report, but I can sample some of the more interesting results:

Only 26% of victims were at a "healthy" weight, 33% were "overweight" and fully 41% were "obese". Many of the accidents were due to pre-existing conditions that likely caused a stroke or heart attack during the dive. Some, like the guy who announced he was planning to solo-dive to 400 feet on air and then disappeared, are either due to morbid stupidity or suicides. Many though, seem like they didn't have to happen. Those are the ones we can learn the most from.

Fully 45% of the fatalities occurred in divers who had done zero dives in the previous 12 months. Think about that. They got themselves killed on the very first dive of their first dive trip in over a year! If that fact doesn't convince you to do a checkout dive at the start of every diving vacation -- or whenever your gear changes -- nothing will!

An additional 28% of the victims had done fewer than 20 dives in the previous 12 months.

Lesson: If you dive infrequently, take time to "re-learn" your skills before doing challenging dives. Re-learning could be as simple as fiddling with all your gear in the garage and thumbing through your logbook and open water textbook, or as comprehensive as hiring a divemaster (DM) to do a scuba skills update or an instructor to fully recertify you. Be humble. If it's been a while, plan some really easy dives to warm up.

At least 29 cases (33%) involved a lack of breathing gas. This is perhaps the most easily prevented accident. In some cases, valves were not turned on, tanks weren't filled, or leaks caused tanks to drain before the dive started. Your dive nerd has seen unfilled tanks, intent on causing mischief, masquerading as filled ones. Usually their treachery is caught above water, but in one memorable case, the evil tank crept 10 minutes into the next dive before it was uncovered!

Lesson: Changing tanks doesn't mean you have a full one! Check your tank pressure immediately before the dive, immediately after starting the dive, and frequently thereafter. Plan to finish the dive, safety stop and all, with at least 500 PSI left in your tank. "Getting your money's worth" by cutting it close before surfacing is a fool's bargain!

16% of fatalities were solo dives, and 50% of the remaining dives involved buddy separation prior to the accident.

Lesson: Next to your inner chicken, your dive buddy is your best friend under water. Don't just pay lip service to the buddy system. Get to know your buddy and plan the dive as a team. Be conservative about who you'll agree to dive with. Stick close to your buddy during the dive. After the dive, talk about what worked well and what didn't. If you lose confidence in your dive buddy, don't be afraid to call the dive. Just tell him/her that you had ear trouble and, by the way, you'd



Diving with a buddy you trust is important not only for safety but also for sharing and enjoying the dive!

like to mix up the buddy teams. Then find another buddy or pair up with the DM.

By the way, DAN reported several cases where a buddy assisted the victim to the surface but then went back down to continue diving before the victim died. A diver in distress will often be embarrassed and deny the seriousness of a situation. Always stay with a distressed diver until they are safely out of the water.

For brevity, I've mainly talked about diving fatalities, but the full DAN report has a detailed analysis of injuries as well. Generally, the patterns for injuries are the same as for fatalities with two notable exceptions.

First, instructors make up a significant number of Decompression Sickness (but not AGE) cases. This is easily understood when you realize that many working dive-masters actually have instructor certifications. Apparently, divemasters will occasionally get complacent about dive safety after hundreds of uneventful dives and push the limits of their computers.

Lesson: All experienced divers should stay humble and continue to dive as you were trained.

Second, 48% of the injuries come from the Caribbean, while only 15% of the fatalities do. The report did not state what percentage of uneventful dives occur in the Caribbean. Still, the apparently disproportionate number of injuries is understandable when you realize that 80% of the injuries involved DCS, a.k.a. "the bends". In clear warm Caribbean waters, it is easy for divers to go deeper and stay down longer. Many Caribbean resorts offer 3 dives per day, while 2 dives per day is more typical in cold water.

Lesson: Stay humble and don't push your limits just because you're in the tropics and the diving is "easy".

To summarize, diving is not risk-free, but we have a lot of control over the amount and type of risks we take. Staying cautious, alert and humble while trying to anticipate and prevent problems will go a long way towards minimizing the risks. Reading the DAN Annual Report is a

great way to learn from other people's mistakes and become a safer diver. The anecdotes of circumstances leading up to some of the diving accidents are poignant reminders of the awesome power of poor judgment.

If nothing else, you should read the concluding paragraphs of the report:

"Death in recreational diving is rare but a real risk for any diver in any diving environment. Divers should be aware of their limitations and plan their dives accordingly. Diving experience and physical fitness are equally important; both need to be maintained. Experience and fitness often progress in opposite directions, and even the most experienced divers may not cope if they become ill or unfit.

Equipment must be well maintained and effectively used. Divers have to bear in mind that hazards may be encountered not only underwater but also on the surface. Currents, waves and cold may turn otherwise pleasant recreation into a struggle for life.

Assistance is important both underwater and on the surface. For the buddy system to work, it takes two able divers, preparation in advance, cooperation and visual contact in all phases of the dive. A buddy diver is the first and usually the only one who can intervene, maybe change a direction of an adverse event and eventually prevent the death. Buddies have to extend their assistance until the assisted diver leaves the water."



General Meetings

June 15: LGBT Center SF

July 9: BBQ in Palo Alto

Aug. 17: LGBT Center SF

Location

LGBT Center, SF

1800 Market Street

@ Octavia

www.sfgaycenter.org

Getting There

The Muni Metro lines J, K, L, M, N, the F streetcar, or Muni Bus lines 6, 7, 9, 10, 14, 21, 26, 47, 49, 66 and 71 all run within 5 blocks of the Center; many run within 1 block.

Also, take BART to SF Civic Center, then transfer to Muni Metro or F lines.

Calendar

Please see details at
<http://www.rainbowdivers.org/calendar.php>

San Francisco Bay	Monterey Bay	Far Away
<p>Jun. 10-11 <i>San José Pride</i> Stop by the NCRD booth!</p> <p>Jun. 15 General Meeting Bob Sommer presents <i>Wrecks to Reefs!</i></p> <p>Jun. 12-Jul.2 <i>Class/Pool Sessions</i> Wallins Dive Center San Carlos, CA. <i>SSI Open Water Class</i></p> <p>Jun. 24-25 <i>San Francisco Pride</i> Stop by the NCRD booth!</p> <p>Jul. 9 <i>Annual BBQ & Swap Meet</i> Palo Alto, CA.</p> <p>Jul. 10 & 12 <i>Class/Pool Sessions</i> Wallins Dive Center San Carlos, CA. <i>SSI Advanced OW Class</i></p> <p>Aug. 11-13 <i>Class/Pool Sessions</i> Wallins Dive Center San Carlos, CA. <i>SSI Open Water Class</i></p> <p>Aug. 17 General Meeting</p>	<p>Jul. 1-2 <i>Class Ocean Sessions</i> SSI Open Water Class</p> <p>Jul. 15, <i>NCRD Boat Charter: TBA</i></p> <p>Jul. 15, <i>MBARI Open House,</i> 12-5pm</p> <p>Jul. 16, <i>Point Lobos Dive</i></p> <p>Jul. 15-16 <i>Class Ocean Sessions</i> Monterey Shore Dives SSI Advanced OW Class</p> <p>Jul. 22 <i>Class Ocean Sessions</i> Monterey Boat Dives SSI Advanced OW Class</p> <p>Aug. 19-20 <i>Class Ocean Sessions</i> SSI Open Water Class</p>	<p>July 28 to Aug. 4, 2006 <i>Wakatobi Dive Resort</i> Sulawesi, Indonesia</p> <p>September 16-23, 2006 <i>DFL @ Anse Chastanet</i> St. Lucia, BVI, Caribbean</p> <p>November 3-5, 2006 <i>Annual Vision Liveaboard</i> No. Channel Islands, CA. includes Wreck Diving</p> <p>March 23 to April 2, 2007 <i>Ocean Rover</i> Thailand Liveaboard</p>



Northern California Rainbow Divers

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