

undercurrent[®]

THE PRIVATE, EXCLUSIVE GUIDE FOR SERIOUS DIVERS

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Bayman Bay Club, Guanaja, Honduras

--Not War, Just Peace

Yes, there are political problems in Central America. And in some cases those political problems are better defined as military problems--or even open warfare. The effect on two popular diving destinations--Belize and Roatan (Honduras)--has been a substantial reduction in tourism. Yet, with a bit of research one will quickly learn that neither Belize nor Honduras is affected by the revolutionary politics in El Salvador, Nicaragua or Guatemala. While the businesses catering to tourists in suffer, tourists seeking isolation and quietude need not avoid these resorts. In fact, I'm damned glad I sought out the Bayman Bay Club, on the island of Guanaja, of the coast of Honduras. It's quite a pleasant spot.

The Bayman Bay Club, a small little retreat perched on a hillside, serves no more than sixteen guests in its eight bungalows. Nearly surrounded by trees and jungles, with a porch for viewing the ocean, the bungalows provide a tranquil sense of isolation. No roads lead to the club. From the airport it's a twenty-minute water taxi ride through mangrove swamps. If one wishes to socialize, the only accessible hot spot is the lounge in the main building of the Bayman Bay Club.

When my self-organized group of nine arrived at the Club, we received complimentary cocktails there from owner Tom Foukes (who hails from Missouri) and a general introduction to life at Bayman Bay. Participating in the greeting were the two resident parrots, Sahsa (the skinnier one which flies) and Lansa (the fat one which doesn't fly). The first floor of the lodge is the social floor, where meals are served, drinks are consumed (there's a well-stocked bar, open 24 hours a day, and guests keep track of their own drinks), and games such as backgammon are played. On the second floor, one may borrow from the paperback library, play bumper pool or just hang out. The third floor, only 12' x 12', is roofed, but open on all sides. Here, with a cold Salva Vida cerveza in my hand, I watched several incredible sunsets in peace and privacy.

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The accommodations are quite acceptable for such an out-of-the-way retreat. The main room in each bungalow holds two double beds (sheets were changed daily) and is decorated by woven Guatemalan panels. A second room contains a huge shower, washbasin and toilet, a large vanity table, and an open closet. The screened main walls keep the bugs out, while letting the breeze (and the sounds of the jungle) through. My bungalow had plenty of hot water, but I must report that others in our party, whose water heaters were in disrepair, were forced to bungalow jump to obtain a hot shower.

My first view of Bayman Bay Club, up three flights of stairs from the landing, left me with some concern about lugging my gear around for diving. That was



A Bayman Bay Bungalow

quickly dispelled when divemaster Jim Hawkins explained there was plenty of room in the dive shop to store gear and fresh water was handy for rinsing. The Club has forty aluminum 80's, pumped anywhere from 2700 to 3000 psi. Their dive craft, a bright yellow, 25 foot double-ended boat (dubbed "Son of the Beach") is a cumbersome craft which putts along on diesel, but is suitable for diving, especially with a wooden platform fitted on the side to facilitate re-entry.

Although we were informed that dives would be conducted at 9 A.M. and 2 P.M., I soon learned that 9 A.M. could become 10:30 A.M. and 2 P.M. might mean 3:30 P.M. I found this somewhat annoying at first, until I let go of my mainland hangups. After all, what the hell difference did it make when there is no other place to go. Of course, I was quick to criticize sloppy scheduling and the application of island time, but that was not the cause of erratic departure. "Son of a Beach" is used to ferry people to the airport and to pick up supplies from Guanaja town. Furthermore, some dive sites were as close as 10 minutes, while others were as distant as an hour and a half. So, no matter what time the boat departed, we were pretty much returned to the Club at the same hour.

We began our diving with a checkout in 20 feet of water, right off the boat dock. In one area lies a small coral encrusted cannon, apparently one of the old three-pounders used as a signaling gun on the Spanish vessels which once plied these waters. Plenty of small tropicals make the area pleasant for snorkeling and I did discover a four-foot nurse shark in but three feet of water. Aside from this spot (Kitchen Reef) diving was either along a wall or down sloping coral reefs, with depths from 20 to 100 feet. Visibility during my October stay was not great; the rainy season brought run-offs and, coupled with plankton bloom, 50-60 feet was quite common (the best visibility is January to April).

Fish life varied. Black Rock, about an hour by boat, had gorgeous reef formations, canyons and caves, but few fish in depths down to 90 feet. However,

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Diane's Reef, much closer to the Club, provided me with fine views of a passing lemon shark, rays, big hogfish, midnight parrots and sizeable angels. I spied plenty of small fish under the plate corals.

At Bayman Shelf, I dropped to 70 feet and swam along the plate and wire corals. Here, a couple of large Nassau Groupers, perhaps as much as fifty pounds, hung about. Yet most of the fish life was in water ten feet deep: wrasses, gobies, damsels, parrots, file fish, durgeons, triggers and other tropicals were prolific. This was surely one of the better dives. In fact, most of the dives were quite decent, the highlight being plentiful and healthy hard and soft corals and gorgonia. Since no one is permitted to pick away at the reef, it will no doubt stay healthy unless some sort of blight hits.

At Wonderful Reef we found plenty of fish: schools of 20-30 chubb, hundreds of blue chormis, and snapper by the dozens. But not every sight was so nice. At Paradise there were nice canyons and crevices but only a few small reef fish. At the "Cut," plenty of corals flourished, but the fish again were small and not abundant, although the fairy basslets were in such profusion it seemed a convention had been called. These were not bad dives and, perhaps, even a little better than average. But they weren't worth repeating.

After several days of easy diving, I got a bit antsy and asked if there were any new adventures. Jim volunteered a trip to an archeological "dig," which required nearly a one-hour boat ride. After landing in a small break in the mangroves, we walked half a mile, past a few head of cattle, and transversed some barbed wire to reach the dig. With our dive knives we scraped the top for an hour, looking for jade beads and pottery. The best I can report is the discovery of a few worthless shards of pottery. Our other single adventure was an evening boat ride to Guanaja town and the local disco, the Mountain View. I was surprised at its "Saturday Night Fever" look--colored lights, strobe lights, squares on the dance floor flashing bright lights to the beat of the music. I spent three hours at the boogie beat. When I walked into the still of the Guanajan night my ears hummed for hours.

BAYMAN BAY CLUB	
Diving for Beginners	★ ★ ★ ★ ½
Diving for Experienced	★ ★ ★ ½
Beach Snorkeling	★ ★ ★
Boat Snorkeling	★ ★ ★ ★
Meals	★ ★ ★ ½
Resort Otherwise	★ ★ ★ ★
Moneysworth	★ ★ ★ ★
★ poor, ★★ fair, ★★★ average, ★★★★ good, ★★★★★ excellent	

I made one other dive at the Pinnacles, a site Jim claimed to be quite unusual. He normally accompanied the divers on a dive--accompanied, not led--but a couple of times he was tied up teaching resort courses. Here, he stayed aboard because he feared the winds could pull the boat loose from the mooring. The best he could do was to provide directions to find "The Pinnacles," a cylindrical coral formation rising from the sand at ninety feet. Somewhere along the way, I made a wrong turn and I and my buddy never caught the view. With all my experience under water, times like these permit me to understand the value of a guide.

Aside from diving and our two forays out of the Club, any other down time was spent reading, playing the games on hand, or doing a little snorkeling. Of course, when off on these junkets, one spends most of his spare time fantasizing about the next meal. I was concerned about the cuisine when I was informed, upon arrival, that the cook had been on board for a single day. That concern was soon dispelled at my first lobster dinner, served with soup, salad, fruit and beans--which are served at every meal. Another evening smoked pork chops was the main

Don't Drink The Water

The International Association for Medical Assistance to Travelers, (Lewiston, New York) has this to say about water quality in the "major city" on these Caribbean islands:

Water potable and safe to drink: Antigua, Aruba, Barbados, Curacao, Puerto Rico.

Water Moderately safe to drink (some strains of *E. Coli* present which may cause diarrhea): Bonaire, Dominica, Grand Bahama, Grenada, Guadeloupe, Jamaica, Martinique, Montserrat, St. Croix, St. Eustatius, St. Kitts, St. Lucia, St. Maarten, St. Thomas, St. Vincent, Trinidad.

Water contaminated and unsafe to drink: Bahamas (Andros, Bimini, Eleuthera, Great Abaco, Great Exuma, New Providence), Dominican Republic, Haiti, Turks and Caicos.

Each traveler responds differently to local water. I have never had a problem with the water (or my stomach) in extensive traveling in the Caribbean, but I have met fellow travelers who have become quite ill. If you're a sensitive one, exercise caution.

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C.C.
Travel Editor

course and, another time, paella. Lunch was usually fish or a meat course, soup, salad . . . and beans, and breakfast consisted of eggs, toast, bacon, fruit . . . and beans. All in all the food was plentiful and good, though a bit oversauced for my taste.

Even with so little to do other than dive, time passed quickly in the lovely setting among friendly people. The diving is certainly pleasant, if not breathtaking, and, though hour trips to the reefs seemed lengthy, they helped fill the time. Tom is trying to find himself a faster craft, but prices are three times that of the states. With tourism down 50% due largely to the unfounded fears of traveling in a war zone, it may be awhile before he makes the investment.

But you may wish to make an investment here, modest that it is. The rates run from \$85/day (January-May), to \$75/day (June-September), to \$60/day (October-November) and for that all inclusive sum one gets lodging, all meals, two tanks/day and an occasional night dive and airport transfers. Those are reasonable rates for this straight forward, no frills outpost. My only serious complaint has nothing to do with the result. SAHSA and TAN airlines are notoriously unreliable and one must anticipate lengthy delays and occasional lost baggage. From the states, an overnight will be required

to get to the states, an overnight will be required in Honduras on the way down (we were greeted by a representative of the Club whose job is to see that Bayman Bay guests are transported to and from their La Ceiba or San Pedro Sula Hotel and to handle any reservation or flight problems). Furthermore, the trip back required a 4:30 A.M. wakeup. Aside from the hassles of transportation, my visit at the Bayman Bay Club--in peaceful Honduras--was generally hassle free.

Diver's compass: Carry plenty of traveler's checks since personal checks and credit cards are not accepted . . . you need a passport to visit Honduras . . . Bayman Bay Club has no rental gear other than tanks, belts and weights . . . It's a good idea to take a malaria preventative and verify that your tetanus vaccination is current; I also take gamma globulin when going to Third World countries as a hedge against hepatitis . . . the no-see-ums are vicious; long-sleeved shirts and pants must be worn in the evening; commercial repellents are not always effective, so one must find an industrial-strength poison to coat the body to gain full protection; once bitten, Sting-Eze or Solarcaine can help . . . While staying in La Ceiba, try dinner at Ricardo's, where pasta is made daily . . . Reservations may be made by writing the Bayman Bay Club, 3126 Bahia Mar, Fort Lauderdale, FL 33316 (305/525-8413).

Staying Warm, Saving Supper

-- Two Efforts At Natural Products

As a diver, getting cold is my nemesis. More often than I would like, I've cut a dive short—even in tropical waters—because of the uncomfortable chill near my dive's conclusion. Of course, a swig of brandy could quickly cure that.

So, it was with some interest that I read a report in *The Wall Street Journal*, about football players who keep their feet warm by applying an herbal powder called "capsicum." No doubt water would wash it off, I mused, so it would not help me through a dive. But, were there other possibilities!

A short time later *The Journal* published a letter from A.R. Perrin of Monte Carlo who claimed that he ingested about an eighth of an ounce of capsicum dissolved in tomato juice or water before swimming. Perrin claims that "my capillary circulation improves so much that I can jump into a pool as cold as 68° and find it comfortable for swimming." He said he would use capsicum and/or a teaspoon of ground ginger in a salad and find that "it makes me feel warm for hours on even the coldest day, though I drink no coffee or tea."

Hooray, I thought, the perfect discovery. Human anti-freeze. But, with further research, my dreams were put on ice. Capsicum, as it turns out, is pure Cayenne pepper. A spokesman at the Department of Pharmacology at the University of California Medical School told me that it acts as a mild vasodilator and will indeed improve circulation—and warmth. Furthermore, it serves as a mild laxative as well. In fact, all one need do to experience the capsicum effect is to have a spicy Mexican or Eastern Indian meal.

Now, could this work for scuba divers? Unfortunately, not without quite a risk.

If one jumps into cold water, his body temperature will begin to drop. The body's natural response is to shut off or limit the flow of blood to the extremities in order to retain the vital core temperature. That is, the body naturally "vaso-restricts." Working as a "vaso-dilator," capsicum permits blood to flow to the extremities by overcoming the body's normal protective response. Indeed, although one will feel warmer, his core temperature will be dropping faster than it would normally—and because he feels warmer, he will *not* be aware of the change.

This is of little consequence to someone who wishes only to take a few laps in the pool. But for a diver under water, the drop in core temperature could very well lead to hypothermia—without the early warning signs.

So my search for human anti-freeze continues. At least, I'll still have my brandy to look forward to.

And if the bottle is empty, perhaps I'll be able to find a Taco Bell nearby.

* * * * *

A nemesis of others, not I, is getting sick on a dive boat. If you've been through the Maui channel when the wind is up, if you've headed to the New York wreck on stormy seas, if you've been on a California channel island cruise in bad weather, if you've plowed the seas toward the *Empire Mica* from the Florida panhandle, you may have been one of the unlucky ones. And unless you've experienced real, down-home sea sickness for an hour or two, you have nothing, nothing to compare it to.

Divers are usually advised to use Dramamine or Marazine and I've tried both. I've not gotten sick, but in some cases I've nearly fallen asleep sitting on deck in a hot wet suit. I try to steer away from them, if I can.

Perhaps we have another option. A couple of enterprising scuba divers, Paul McGrath (who was once a NOAA officer) and John Rupolo (A chiropractor) have done a bit of research on their own to formulate a new "100% natural" product, with none of the side effects of the other motion.

The essential ingredient is ginger root. A study demonstrating the value of ginger root as a motion sickness preventative was published in the British Medical Journal *Lancet* in 1982. The conclusion "*Z. officinale* (i.e., ginger root) was superior to dimenhydrinate (i.e., the active ingredient in dramamine) in reducing motion sickness." And now I know why my grandmother always gave me ginger ale whenever I had an upset stomach.

McGrath and Rupolo have gone a little farther than just marketing 500 mg tabs of ginger root. By researching medical journals to find other substances which seem to have an effect on motion sickness and nausea they've added another six ingredients in limited quantities: calcium lactate, niacin, B-2, B-6, papain and bromelain. They say take two tablets half an hour before departure and 2-4 every four hours. McGrath claims, "It has been used successfully over 18 months during random studies of individuals on dive boats, cruises, and for general motion sickness."

We hope he's correct. But what works for other may not work for you. The best way to find out is to try the product yourself. It's called NAU-STOP and may be ordered by sending \$8 for 50 tabs to Nutri-West, POB 129B, Douglas, Wyoming 92633.

I should add that none of us at *Undercurrent* has

put it to the full test. We've been diving in too calm waters. But I have taken 4 tabs at a time while sitting in my desk and did not fall asleep. That in itself

should be a good endorsement.

C.C.,
Travel Editor

The Molasses Reef Massacre

-- *What Is The Value Of A Coral Reef?*

On August 4, the Cypriot ship Wellwood ran aground on Molasses Reef in the Key Largo National Marine Sanctuary, near Pennekamp State Park. The 400 foot freighter demolished great sections of the reef, leveling nearly 20,000 square feet and damaging much more. Both the State of Florida and the U.S. Government are bringing suit against the owners, operators, and charterers of the vessel. Currently the parties are in pretrial negotiation, with the governmental bodies attempting to increase the damages and the insurance companies, representing the defendants, trying to reduce the damages.

Before the vessel was permitted to be pulled free from the reef, the state of Florida and the U.S. Government required the owners to post a \$2.6 million bond (the value of the vessel) and a \$1.75 million bond to cover rescue costs of the Coast Guard and any NOAA penalties that might be assessed.

One of the more controversial moves in the case involves a policy determination by local county Judge Allison Defoor to not only fine the owners of the vessel, but also to assess them an amount equal to the fine to be paid to a nonprofit institution (in this case the Pennekamp Coral Reef Institute). The question as to the legality of the assessment has not been determined; Judge Defoor says he will make the assessment, then let the defendants challenge the legality in an appeals court.

Money from the assessment is to be used for research public education, and perhaps facilities. Pennekamp, of course, has too many divers for the size of the park which puts extraordinary pressure on the integrity of the reefs. To mitigate the pressure, it's conceivable that old vessels will be sunk just outside of the park proper to provide new diving areas.

One of the ultimate issues, here, will be just how to determine the value of a coral reef. Key Largo Attorneys James S. Mattson and James T. Lynch, who are associated with the Pennekamp Coral Reef Institute, have prepared this useful and fascinating analysis, concluding that Molasses Reef is worth a minimum of \$715 million.

* * * * *

Reactions from several people to Judge Defoor's "restitution" orders, plus the recent grounding of the Wellwood on Molasses Reef, prompted us to

write this article. The coral reef tract off the Florida Keys is usually taken for granted; it becomes the subject of heated argument whenever new residential developments are proposed. We doubt that many people have considered calculating a "dollar value" for these magnificent natural resources, and we anticipate that many of our readers will take exception to our doing so.

There are two common reactions to the notion that one can place a dollar value on a coral reef. One is: "it can't be done"; the other: "it shouldn't be done." Some believe that if dollar values are placed on coral reefs, then polluters who are despoilers of the environment will simply pay that price as the cost of doing business and eventually all of our natural resources will be sold.

This article should convince the first group that it can be done. The belief that it shouldn't be done deserves some comment.

First, nothing is priceless. This includes human life. Juries everywhere are called upon to convert loss of life, or loss of a limb or two, into dollars and cents. A value can be put on anything. If it is bought or sold on the open market, "value" is the market price. If it is illegal to buy or sell it, then value is what society "thinks" something is worth.

The concern that we will sell our natural resources by putting dollar values on them can be dealt with by regulations, laws, and penalties imposed on those who try to "buy" them. If a Queen Conch is really "worth" fifty cents, based upon the cost of hatching and raising one, the public may impose substantial penalties on one who illegally takes these animals. Penalties are simply set high enough -- and perhaps well in excess of the "value" of the resource -- that few people are willing to run the risk of being fined.

A coral reef has both market and nonmarket use values. Market values include such obvious uses as commercial fishing. Nonmarket uses include snorkeling, sightseeing, and *scuba diving*. Use values, both market and nonmarket, are quantifiable, and can be determined for many natural resources. Once the use values have been determined, we can use them as the minimum value to be assigned to the resource.

One method for determining the nonmarket use values of a recreational resource is the travel cost method. This involves adding up the money spent by resource users in travelling to and using the resource.

This methodology can be applied to the coral reefs off Key Largo, for example. Our calculations are not precise, and are based in some instances on educated guesses, but the exercise is a worthwhile one as it shows how nonmarket values of natural resources can be calculated.

VALUING THE PARK/SANCTUARY COMPLEX

While John Pennkamp Coral Reef State Park and the adjoining Key Largo National Marine Sanctuary total over 180 square miles in area, recreational diving, sightseeing, and snorkelling use is almost entirely conducted in seven small live coral reef areas: Molasses Reef, The Elbow, Carysfort Reef, Grecian Rocks, White Bank Dry Rocks, French Reef, and Key Largo Dry Rocks.

Visitors to the Park/Sanctuary include both Southeast Florida residents and out-of-state visitors. The "travel costs" for these users include: a) airfare, rental cars, and mileage b) hotels, motels, and meals; c) dive trip costs, air fills, rental gear and a portion of their diving gear costs. For the purpose of this article, it was impossible for us to determine the transportation, per diem, and equipment costs, but we were able to get some good numbers for the money paid out locally for dive trips, boat rentals, gear rentals, air fills, and the like.

We contacted Pennkamp Park, the Coral Reef Park Company (the park concessionaire), and the Keys Association of Dive Operators (KADO) to determine the annual number of visitors to the Park/Sanctuary, the annual number of person-trips to the reefs made by KADO dive shops, and the gross annual revenues of the park, the concessionaire, and KADO shops in the Key Largo area. There is no doubt that, absent the coral reef, all of this income would disappear. Therefore it is reasonable to attribute all of these revenues to the "non-market use" value of the seven major live coral areas in the Park/Sanctuary complex.

For the most recent 12-month period for which data could be obtained, approximately 400,000 visitors went through the Park gate; another 250,000 visitors entered the Park/Sanctuary by water. Ten Key Largo area KADO dive shops transported 300,000 users to the reefs on their dive boats. (Only half of the dive shops reported their data by press time, and we increased the estimate by a pro-rata amount.) Reducing the Park's 250,000 water visitors by 50% to account for the overlap with KADO dive boat trips, we estimate that about 830,000 persons entering through the gate do not go beyond the land boundaries of the Park — perhaps 150,000 to 200,000.

Gross annual revenues of the Park, the Park concessionaire, and the dive shops total about \$7.5 million, or about \$9 per person visit. The total area

of live coral formations in the seven sites, according to our estimates from NOAA charts and our personal knowledge, is about 560,000 square meters or 2/10 of a square mile. By dividing the gross annual revenues by the area used we obtain a minimum annual revenue of \$13.30 per square meter (\$1.23 per square foot) of live coral formations.

If the rest of the users' travel costs are considered, this figure goes up dramatically. One of the larger dive shops estimated that 80% of their divers were from out-of-state. The manager of a major motel in Key Largo estimated that 75% of his total meal and lodging revenues are reef-related. For the purpose of this calculation only, we conservatively estimated that each in-state user of the park/sanctuary spends an additional \$10 per visit; and each out-of-state spends an additional \$40 per visit. This amounts to an additional \$28.2 million per year in annual "travel costs" by Park/Sanctuary users, and raises estimated total revenue to \$35.6 million, or \$63.63 per square meter (\$5.91 per square foot).

Not included in our calculations are the values of commercial and recreational fishing associated with the reef. Many species of fish and shellfish (snook, snapper, lobster, and so on) spend part of their life cycle on the reef and without the reef many of our fisheries would disappear.

The next step is to compare the coral reef resource to the "corpus" of a trust, managed in perpetuity by two "trustees," the State and Federal governments. The "beneficiaries" of the trust are the citizens of Florida and the United States, and the gross annual expenditures by all users of the resource is the "annual income" produced by the trust, and paid to the beneficiaries. This analogy is called the "public trust doctrine." An individual who destroys part of the "corpus" of the trust can be sued by the trustee to replace that which he has destroyed. The measure of damages in such a suit depends on whether the resource has been completely destroyed, or whether it will recover naturally in a few years, so that only the income stream has been interrupted.

Using a historical rate of return (interest rate) of 5%, we calculate a conservative (minimum) non-market use value of the live coral reef areas in the park/sanctuary at about \$1,275 per square meter, or about \$118 per square foot. The combined minimum value of all seven areas within the park/sanctuary complex, using this method of analysis, is approximately \$715 million. The minimum value of Molasses Reef alone is about \$165 million.

This article is intended to stimulate our readers into giving some thought to the values of the natural resources surrounding our tiny island paradise. The next time you see someone carry off a piece of coral, or navigate negligently over some of our shallow reefs, give them a piece of your mind. Better yet, give them a copy of this article.

Why Custom Wet Suits Don't Fit:

-- And Special Considerations For Women

The serious diver shopping for a wet suit knows that he is wise to spend extra dollars for a custom fit. The suit should be warmer and should give better wear overall. Getting a custom fit may not be easy. Many of our readers have complained that the custom suit they brought did not fit properly even after two or more alterations. What causes such carelessness and what can a diver do about it?

There seems to be nearly universal agreement between manufacturers and dive shops that the primary cause for poor fit is poor measurement at the dive shop. This may have several reasons: using a measurement form or standards that are out of date; using a measuring form from a different company than the one from which the suit is being ordered; or having untrained personnel doing the measuring. This can be further compounded by customers who do not bring along the proper swim suit to wear under the wet suit, or whose weight alters between the measurement and the fit.

The Problems Of Measurement

Measuring a customer for a wet suit is relatively complicated. An untrained clerk can be far off on any number of dimensions. Jack Bradley, President of Sea Suits, told us that, "you need a lot of different measurements for a custom suit, and these measurements should be made by people who know how to measure."

A dealer who has been doing business with any manufacturer for some time should know how that manufacturer wants measurements to be taken. Sea Suit's Bradley says, "I take the measurements and adjust them for the stretch of the material that I will be using. If I've had any returns or complaints from a given shop, I can check back with the pattern used and see if it varies from what was given me. If the complaints are the same each time, then I know how to adjust that shop's measurements to make a suit that fits."

Fred Boysen, Ad Manager for Harvey's, said that the major problem they have with measurements is, "the shops just do not take as many measurements as we need or make mistakes in the measurements." The newer, softer materials used also pose a problem and Harvey's requests that even for off the rack suits the shop should "order a size smaller than they are used to ordering, because of the stretch."

Bob Breman, of Halls Dive Center in Marathon, Florida told us that it is easy to get wrong measurements, "each manufacturer has a different

set of measurements and requirements for measuring. Some want tight measurements and some want them loose. If you get someone that does not have a lot of experience in measuring for a particular brand, you could get a poor fit."

Geoffrey Stern, President and custom cutter for Blue Water told us, "most of the problems we have is with shops that are across the country from us. We do not have the opportunity to sit down with them and fully go over how we want measurements to be made. Shops close at hand do a better job."

Some people taking measurements don't insist on having the customer disrobe to a swim suit. As Stern said, "When I see a crotch to shoulder measurement for a guy 6 feet tall that is 35 inches. I know that he was measured while wearing clothing." Satisfaction with your suit really depends upon the dive shop and the care they exercise with taking your measurements."

All three of the manufacturers admit that they occasionally blow it at the cutting table. Sometimes the error is a flatout mistake. The late John Hoynacki, owner of John the Diver, Inc., in Branson, Mo., acknowledged that many problems begin in the shop, but he also said that the manufacturers make their share of mistakes when they face too heavy a production schedule. This suggests there may be chances for a better fit when one buys out of season.

Women Problems

Women seem to face the greatest problem in getting custom-fitted suits cut correctly. Margaret E. Howland of Yonkers, New York shared with us her frustrations:

"Like many women I am heavy in the derriere. But I had to send the suit back twice to have them redo parts of it to get it to fit at all; and I finally settled for a poor fit. My high waist pants are extremely low waist in the back. And my jacket has an unbelievably long beaver tail. I ordered it last May, it came in June, but after sending it back twice I didn't get to use it until August. . . . The big problem is that I don't think the Parkway people believed my measurements, or else they only have men in mind with their skinny derrieres. . . ."

Geoffrey Stern, President of Blue Water, agrees that many manufacturers have difficulty cutting women's suits and don't always consider the variation in contours. "Take a measurement form that says this woman customer has a 24 inch waist and 38 inch hips and does not want a hip zipper. If you cut the waist correctly at 24 inches, the lady will not be

able to get into the suit because it will not fit over her hips. Thus you have to give a fuller cut to the waist than is indicated so that she can get it on."

"Have the shop make the measurement twice to make sure that they got them correct."

Another problem is bust measurement. If the person in the shop is too embarrassed to ask the woman diver for cup size the suit may not be cut right. A 36 inch bust does not tell the cutter if the lady has a small or large rib cage so he may have to guess.

Jack Bradley claims that he will not make a 1/4 inch suit for a woman. "Women have a problem getting into and out of a quarter inch suit, so I recommend a 3/16" because it is a little more flexible."

Jill Wallin of Wallin's Dive Shop in Redwood City, CA, too admits that women have a special problem. "I can almost promise that if Bo Derek came into the shop and one of the guys took her measurements they would be wrong and she would get a poor fit. Women looking for a wet suit should be measured by a woman." Another factor that Ms. Wallin pointed out is, "some women do not wear bras. Thus they do not have the support needed to obtain an accurate bust measurement. So the suit does not fit too well when she gets it back."

Shape problems are not limited to women. A man with a paunch may suck it in when he is being measured, only to find out that his custom suit is too tight around the middle. A person who lifts weights and is highly muscular needs a different cut than the average person. And there is the problem of vanity for both sexes. If the weight or height is fudged, then the suit will be cut for the wrong dimensions.

But what should you do about a poor fit once you have it?

Take it back to the shop and have it redone or altered until it fits to your satisfaction. Take your time, have the measurements rechecked against the original order, and persist until you are satisfied. But do not allow too much time to pass from the time you receive the suit until you complain. They may assume that you have gained or lost weight and avoid the responsibility. Try it on at the shop and have the shop people look at the fit also. Don't wait to take it home and try it on because if you do, you may not get back to the shop for some time to register your complaint.

A reputable shop wants you to be happy because they want your business. If you register your dissatisfaction at the time of delivery, they will be able to offer more help with needed alterations and to act as your agent with the manufacturer.

Guaranteeing A Good Fit

How does one guarantee a good fit of a custom suit? Jack Bradley suggests that you "go to a dealer that has solid experience with the brand of wet suit that you are planning to buy. Most problems arise," he says, "with newer dealers or with dealers who are pushing a new line with which they have had little experience."

John 'the Diver' Hoynacki told *Undercurrent* "first research the shop. Ask to be referred to people who have gotten good fits and poor fits. Check out both groups, especially those who had a poor fit to see how the problems were handled." If the shop says they have never had a problem like that, then Hoynacki said, "Watch out; they will lie about other things."

Bob Breman suggests double checking all the measurements taken. "Look at the form while it is being filled out and if something doesn't look right have them do it over."

"If the person in the shop is too embarrassed to ask the woman diver for cup size the suit may not be cut right."

Stern goes one step further. He says, "Have the shop make the measurement twice to make sure that they got them correct. Also check to see that the correct manufacturer's form is used." He also suggests that "the customer should stand in a normal erect position and give correct weight and height and wear the suit that you expect to wear under the wet suit." You may even go so far as having the same measurements taken by different shop personnel to compare the results.

"Come to an understanding with the shop before you lay out your money so if it doesn't fit then either the shop or the manufacturer owns it and then only put up at most one-half of the price quoted -- or less if possible. When the suit comes in, take your swim suit along and try the new suit on in the shop and if possible in a pool right then. Both you and the shop will be able to see how it fits and any adjustments needed can be taken care of right then."

Do not deal directly with the manufacturer. The dive shop has first line of responsibility. But, if your dive shop has gone out of business then you have to deal with the manufacturer. If you seek a refund, you will not get all of your money back. Jack Bradley puts it this way: "I see a suit to a dive shop for a wholesale price and the shop marks it up. If I make a refund I can only refund the amount that I receive from the dealer."

Aside from picking a reputable shop, a reputable product, and checking out the measurements, the most important thing you can do is to give yourself

time. First, take the time in the shop to get measured properly. Second, if you are planning a trip departure in 3 weeks and you're promised the suit in 2½ weeks, you might find yourself without it. Or if it does arrive, it might not fit (in that case get an agreement from the shop owner to let you use the suit on the trip and have it refitted upon arrival.)

To expedite suit delivery, many manufacturers will move your order to the top of the pile for an extra fee

of \$20 or so; they'll use UPS blue label or Federal express (at your expense) to get their product back and forth across the country. It doesn't take long to add \$100 to the cost of a suit just because you have failed to plan far enough in advance for your needs.

So give yourself the time, and even then, realize there's as much as a 10% chance that when you get your custom-fitted suit some part will not quite fit the way you want it to.

A Cancer "Epidemic" In Fish

On the surface, the nation's waters look better than ever. Twelve years into the Clean Water Act, noxious bubbles are the exception rather than the rule, and fish have returned to once polluted waters. But all is not well. Hints of a cancer "epidemic" in fish are emerging from New York harbor, Puget Sound and waters in between, and biological sleuths are rounding up the usual suspects.

"There's fairly good evidence that chemicals in the water are the cause," says biologist John Harsbarger of the Smithsonian Institution. And there are worrisome cancer rates in fish from just about every polluted body of water examined.

The most seriously affected fish feed on the bottom, where chemicals concentrate and enter the animals' food chain. According to *Newsweek* magazine, at congressional hearings last year, researchers reported on six species of fish from five bodies of water that have alarming cancer rates:

- In the Hudson, more than 80 percent of the Atlantic tomcod older than two years have liver tumors.
- Fully 30 percent of the bullheads in New York's Buffalo River have skin or liver tumors; so do nearly 80 percent of the bullheads that reach the age of three in Ohio's Black River.
- In the inner harbor of Everett, Wash., more than two-thirds of the English sole were found to have seriously damaged, often cancerous, livers. In other parts of Puget Sound and its tributaries, sediments contain more than 360 kinds of aromatic hydrocarbons, industrial chemicals that include known human carcinogens.
- In Michigan's 2,660-acre Torch Lake, some 25 percent of which is filled with tailings from a nearby copper mine, every sauger caught has a liver tumor, as do many walleyed pike.
- Many pollutants dumped into waters over the years settle to the bottom, where they are nearly impossible to remove. Waiting for nature to deposit more sediment and literally cover up the problem may be the only feasible solution. Although major commercial fisheries, especially in the ocean, do not seem to be affected, consumers have little way of knowing where a fish came from -- and eating fillets from contaminated waters is not recommended. (Because fish concentrate pollutants such as PCB's in their tissues, eating a one-pound fish from Lake Ontario is equivalent to drinking as much as 1.5 million quarts of that polluted water.)

The data do not necessarily mean that, with fish succumbing to cancer, man is next. In the Hudson striped bass do not get tumors as the tomcod do, suggesting that other factors -- stress or a genetic predisposition -- are at work. Nevertheless, lab experiments show that cancers strike fish in the same organs -- and often after exposure to the same chemicals -- as they do humans.

Technology And The Treasure Hunter

-- The Fortunes Grow And Grow

Diver Joseph Amaral was groping in the blackness 80 ft. below the surface of the Atlantic last August collecting musket balls and other artifacts from an 18th century shipwreck, when something glistened near him in the sand. A plain gold ring, the find seemed unexceptional at first in a treasure site scat-

tered with good doubloons, pieces of eight and other booty. But then a crew member noticed the inscription inside the ring: "In memory of my beloved brother, Capt. John Drew, drown'd 11 Jan. 1798, aged 27." The ring had belonged to Captain James Drew, who died just four months later when his own

vessel, the *De Bruak*, sank two miles from Lewes, Delaware, during a storm. This meant Amaral, 35, had proof that the wreck being explored was indeed the legendary British warship that preyed on the vessels of Napoleon's allies and when it went down, was reportedly loaded with gold bullion, jewels and gold and silver coins.

Finding a ring lost in the ocean would seem almost impossible. But according to Amaral's employer, Commercial Salvager Harvey Harrington, locating the ship was actually "embarrassingly easy." At least

seven earlier expeditions had failed to find it. By contrast, Harrington's company, Sub-Sal of Reno, Nevada, pinpointed the site in just three weeks last April, thanks to state-of-the-art devices that are making treasure hunters both more scientific and more successful. Where once these undersea detectives took a wild plunge with ancient charts and a hunch, the modern salvage team can reduce the search area to the size of a small lake, and hunt for pieces of gold no bigger than a pencil eraser.

Sub-Sal spent \$75,000 to find the wreck, and will

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spend a million more to complete the salvage. The payoff: \$5 million to perhaps \$500 million, of which the state of Delaware will claim 25%. About \$50,000 of the salvor's initial investment went for one indispensable tool: side-scanning sonar of the type used by U.S. Navy ships searching for Korean Air Lines Flight 007 in the Sea of Japan last year. Mounted in a torpedo-shaped housing, the side-scanner emits pulses horizontally as well as vertically. It is towed behind a search ship, which methodically crisscrosses a designated area, to produce a detailed chart of the sea floor. By studying the "hits" on charts, an experienced technician can pick out possible ship ruins. "We found eleven targets in the first two days," says Harrington. His divers then went down to investigate; the fifth wreck they checked was the *De Braak*, the object of their hunt.

The *De Braak* is a spectacular new find, but scarcely the only one. Other salvors are finding sunken treasure by using computerized navigational devices and techniques developed for oil exploration and military navigation. Magnetometers, often used to detect ferrous metals, can pinpoint such common shipboard fittings as iron nails, barrel staves and anchors. Trailed behind a ship like a side-scanner, a magnetometer will record such objects even if they are buried in sediment.

The sea-searching mini-industry is so busy that it supports various suppliers and tinkerers who refine and redesign electronic devices and other equipment to meet the special challenges of salvaging. One of the largest operators, Treasure Salvors of Florida, uses a specially designed high-speed magnetometer. Because it can move four times as fast as a normal instrument, the company has been able to cover 240,000 miles of seabed with unusual speed and thoroughness.

Treasure Salvors has already brought up at least

\$27 million worth of gold, precious gems and artifacts from the wrecks of the Spanish galleons *Santa Margarita* and *Atocha*, which sank in 1622. The company found the sister ships in waters about 50 ft. deep off the Florida Keys. During the continuing quest to trace the path of debris scattered as the ships broke apart, Treasure Salvors has videotaped the search area from the air; the shallowness and clarity of the water enable detection of such important visual clues as scars on underwater reefs.

Finding the wrecks is often only the start. Sophisticated recovery techniques are needed to get at the loot. Various blowers are sometimes used to dislodge sand. The airlift, a sort of giant vacuum cleaner attached to the search ship via a long plastic tube, removes layers of sediment while divers sift for treasure. Diving methods developed for undersea commercial uses, such as seabed mining and pipeline building, have made it possible to salvage deepwater wrecks. A notable example: *H.M.S. Edinburgh*, a British cruiser that sank after a Nazi attack in the Barents Sea north of Murmansk, U.S.S.R. during World War II. The *Edinburgh* was located with sonar devices in 1981. Then, in what the *London Sunday Times* called "the greatest salvage operation in the annals of the sea," British salvors brought up most of her five-ton cargo of gold from icy waters 800 ft. deep. Hot water was constantly circulated through their diving suits to ease the extreme cold.

Such an operation, like those that located the *De Braak* and other recent finds, rolls back the long-held secrets of the deep. One measure of how far that salvage trade has come is that when the *De Braak* sank 186 years ago, salvage was impossible, even though her masts were visible above the surface for more than a year to mark her grave.

Janice Castro
Time Magazine

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