

# AQUANEWS

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## Is There Hope for the Coral Reef!

By Lada Simek

### SITUATION

In case you do not know, many authorities are giving the coral reefs 30-50 years before they die. The culprit is "bleaching", a condition which is primarily caused by excessive warmth of the water. Other things may cause it also, but heat is the number one reason. A major event in 1998, caused by an unprecedented El Nino, resulted in the bleaching of 55% of the Great Barrier Reef and caused 5% of it to die. Similar episodes took place in the Red Sea and the Caribbean. IT ONLY TAKES ABOUT TWO DEGREES CELSIUS rise to trigger such an event! With global warming either here or on its way, things look glum for the coral reef.

### PUZZLEMENT

Corals that are bleached do not always die; they frequently come back again. More than 40% of the corals damaged in 1998 are back in shape- not necessarily as good as new, but alive. We take them as extremely delicate, living in a narrow temperature range. But wait a minute! Evolution-wise, organisms this delicate do not usually survive very long, and the coral reef has been with us for 220 million years, the last 60 million as a part of tropical, shallow seas. What about the ice ages? It certainly had to adapt.

### BACKGROUND

All living thing need a source of energy, (sugar, carbohydrates, oils) and also building material to make cells. This means proteins, which require nitrogen. In our northern waters, resembling a green organic soup, nitrogen is quite plentiful. I did an analysis for nitrogen in Jamaican waters. It came up virtually zero! That is why the visibility is so good.

### MECHANISM

The coral polyps "fish" for planktonic food, (protein). They could not make it alone in those clear tropical waters. In their tissues they harbor symbiotic algae called zooxanthellea. The algae photosynthesize using sunlight, making food and oxygen from which the polyp benefits. This is why most corals are a brown to green. Once in a while, the polyp may sting and catch some proteinacious food, and to the algae, nitrogen spells fertilizer! There is more. Beneath the polyp are filamentous algae, which are green and also photosynthesize. They are very light and temperature sensitive. Some light loving ones are close to the surface while others, needing less light, are deeper inside the coral. There may be as many as five different kinds. The algae are responsible for over 80% of the caloric needs of the polyp. They can not make it without each other.

When the coral is exposed to an environment it finds stressful, such as different temperature, different salinity, sedimentation or chemicals, it casts out its symbiotic algae. (How and why this is done is a mystery.) It may then appear white, although it may still have 10% of the algae left. At this point, if the stress is removed, the zooxanthellea in its tissue begin to multiply and the coral, though injured, may partially recover.



(Continued on page 3)

## AQUANEWS

THE OFFICIAL PUBLICATION  
OF THE ROCKLAND  
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## Ocean Wreck Divers

**The SCUBA Flea Market is scheduled for Sunday, February 15, 2009 from 9:00 AM to 2:00 PM.**

Admission is \$5.00 for the SCUBA Market.

It will be held at the Toms River Intermediate School North at 150 Intermediate North Way, Toms River, New Jersey, 08753. Intermediate North Way is very close to the intersection of Old Freehold Road and Route 571 near the Bey Lea Golf Course.

*From the North take the Garden State Parkway south to exit 88 and head west on Route 70. Travel 2.9 miles on Route 70 and exit from the right lane onto Route 9 south. Travel 4 miles on Route 9 south and exit from the right lane onto Route 571 East/Indian Head Road. Travel 0.5 miles on Route 571 east and your fourth left will be Intermediate North Way.*

*From the South take the Garden State Parkway north to exit 83 and follow the signs to US 9 north. Travel 0.5 miles on Route 9 north and turn right at the first light (Route 571 east/Indian Head Road). Travel 0.5 miles on route 571 and your fourth left will be Intermediate North Way.*

In general, you would find all the goods sold at a regular dive shop plus many additional items. Some of the booths are run by local dive shops that sell their regular new gear at a discount for this one day. Other tables may be run by specialists who focus on one aspect of diving such as new backpacks for double tanks and other technical diving gear. Some of the booths also sell used gear.

They will have hot dogs, soft pretzels, coffee, tea, and soda for sale.

Rockland Aquanauts Organization Inc.  
Mission Statement:

**To provide, promote, and advance environmental protection, care, and voluntary clean-up of waterways by any and all lawful means; to promote the importance and care in every manner possible by environmental awareness and otherwise; to purchase, print, publish, and circulate literature to promote the importance and care of the waterways and the work of the Corporation. To perform all acts the Corporation may deem appropriate or advisable in such operation; to establish, provide, and voluntary clean-up waterways, to encourage, support and subsidize the cleaning and protection from pollution.**

## Is There Hope for the Coral Reef!

*(continued from page 1)*

Bad news- In order to survive, the polyp's energy requirements are not 100% but more like 130-140%. The polyp owns his little calcium carbonate house without a mortgage, but like a coop or condo, there is a high maintenance fee. It must chip in energy and protein for the colony's coenosarc. This is a mucous membrane that covers the entire coral head, making it feel slimy. Through this membrane, a lucky polyp that caught some food is able to share it with the rest of the colony. It also acts as to irrigate the coral head, helping to keep the colony clean, much like a runny nose. The coenosarc is made of fats, carbohydrates and water. These are expensive commodities in the tropical sea.

### GOOD NEWS (maybe)

Only in the last ten years has it been found that there are genetic differences in the zooxanthellea, making perhaps four categories. Some appear to be more heat tolerant than others. On a reef, some colonies may get bleached when next to them is a colony that is perfectly healthy. One researcher says that the initial bleaching is heavily determined by the type of zooxanthellea within the corals' tissues. Another individual found that three years after heavy bleaching, the affected corals had changed to a higher temperature tolerant symbionts. The Persian Gulf corals, which are frequently exposed to higher temperatures, have also adopted the heat tolerant algae. A team in Australia experimentally showed that some species of coral could gain two degrees C of thermal tolerance when they were forced to change symbionts.

No one knows where the corals get the replaced algae from. Do they collect them from sea water or do they have a reservoir inside their bodies for such emergencies? It is also not known what penalties there are for a symbiont exchange or how many times it can be done. It might have negative effects, such as slower growth. Regardless though, everyone agrees that bleaching is a bad thing, leaving the corals sick and vulnerable, but it also may be a way of reaching a new stability level and it may be evolution at work.



# 10th Annual Polar Plunge

## SuperBowl Sunday

### February 1, 2009 around 12pm

### at the Grassy Point Seawall

### Stony Point

**Come take the Plunge or sponsor your favorite Seal. There will be Music, food, t-shirts and prizes.**

**Raffle prizes of:**

**1st \$5,000.00**

**2nd \$2,000.00**

**3rd \$1,000.00**

Ticket available at:

- Babes Bar and Grill on Railroad Ave in West Haverstraw
  - Dee's Country Deli on 9w in Stony Point
  - The Bee's Nest on 9W in Stony Point

***This year's Polar Plunge will be for Lexi Manning and Danielle Swoboda. The funds will be used to help with mounting medical expenses.***

<http://www.stonypointseals.com/>



## GPS for Divers Almost Ready

Divers are still getting lost but help is near. Not long ago six Japanese divers were lost and only traces of them were found. Such things are happening every year. If you dive off an island like Roatan or Bonaire, getting lost is not much of an issue- you can always swim to shore. But a different story presents itself when you are on a live-aboard and land may be MANY miles away.

A German company (Seareq), recently released its Electronic Rescue and Locating System, (ENOS for short). The system works in conjunction with GPS, which is operated by the US government. It works independently of any international rescue service and as such has no operational charges attributed to it. Each diver carries a transmitter that is only activated on the surface in case of an emergency. The boat carries a receiver that must be switched on while the divers are in the water.

When a diver activates a transmitter, the receiver emits a loud sound, transmits the lost diver's GPS position, then it calculates the distance and direction of the emergency signal. The effective range depends on the height of the antenna, two miles for a small boat and six for a larger and higher craft. The system is being used by the *Galapagos Aggressor I and II*, *MY Seven Seas in the Red Sea*, *MV Carina in the Maldives* and *S/C King Bamboo in the Seychelles*. There have been snags and bugs, but they are being worked out.

Now for the down side, each diver transmitter costs \$1250 and the master receiver for the boat is \$4500. However, it is possible to rent a six transmitter and one receiver package for a week for \$120 per person.

Lada Simek



## **Dive Into Fitness! Incredible New Site - [www.ScubaFit.com](http://www.ScubaFit.com) A MUST for Divers Wanting to Stay in Dive Shape**

Meet Gretchen Ashton - a dive enthusiast and professional fitness trainer who has a passion for scuba divers. For many years, Gretchen has trained fitness competitors and athletes and now she's taking aim at the scuba industry! Instructors and novice divers alike will benefit from her insights and methods outlined at [Fit-Diver Workouts](#). Dive fitness for women also makes its debut with [The Mermaid Workout](#) - both are highlighted on her website.

Ashton helps divers learn why physical fitness is important to diving performance and safety and what it means to be [ScubaFit](#). Benefits divers will experience include weight loss, reduced blood pressure, heart and lung health, improved strength and endurance, and a side benefit, women will look great in your wetsuit or bikini, while men will also see significant health and appearance benefits.

Contact [gretchen@scubafit.com](mailto:gretchen@scubafit.com) for online coaching and workout plans, private fitness training and group exercise instruction.

“Exercising to enhance recreational activity is a positive way to take responsibility for your health, bring focus and motivation to a fitness routine and improve overall scuba diving performance,” says Ashton, who hosts discussion and answers questions on the ScubaFit [message board](#).

ScubaFit has been well received with invitations to speak at local dive clubs and publishing opportunities. Ashton is hosting the first in a series of monthly [ScubaFit Workshops](#) at Pure Fitness Sports Clubs throughout southern California and is currently expanding the program nationally. Training videos are in development and will be available online and in dive centers in mid-2009. The first annual [ScubaFit Beach Walk 2009](#) will be held in San Diego, California at La Jolla Shores and includes tours of the Scripps Institute of Oceanography Pier and Birch Aquarium.

“New generations of divers are participating at an increasing rate, yet according to Divers Alert Network (DAN), the majority of the diver population appears to be aging. Bridging the underwater world of scuba diving and the topside world of fitness is the solution to developing comprehensive exercise programs for scuba divers,” says Ashton. Ashton recommends basic exercise protocols according to the American Heart Association and American College of Sports Medicine. Read the [full report](#) and access links to fitness and diving resources.

A review her [credentials](#) reveals Ashton is registered with the National Board of Fitness Examiners, is a fitness therapist trained in over 30 clinical conditions such as heart disease, high blood pressure, obesity, diabetes, asthma and arthritis. All of which are top reported medical conditions by divers. As a biomechanics specialist, she is recognized for innovative workouts and exercise equipment adaptations to accommodate the individual regardless of their current fitness level or orthopedic challenges. Her background includes peak performance coaching for local eco-adventure teams, competitive strength athletes, female fitness competitors and fire fighters.

For more details, visit the website at [www.ScubaFit.com](http://www.ScubaFit.com) - Ashton indicated that plans are being made for SCUBA FIT sessions in Southern California and perhaps in other cities around the country.

**ANNUAL MEMBERSHIP FEES ARE DUE**

Rockland Aquanauts Organization  
2009 Dues

I guess it is that time of the year again, Membership Dues are due. Last year all our members received much more than they gave out to the Organization. As usual you will be receiving a tax donation for the first \$25.00. All members who attended the Annual Dinner not only received money off their own dinner but they also received money off their guests dinner. Everyone whom attended also received prizes, some worth many times the cost of their Dues. Don't forget the Annual Picnic as well as all the BBQ lunch's after the Lake Dives.

So please send in your \$42 dues early to;

Rockland Aquanauts Organization  
c/o  
Paul Galeazzi Jr.  
4 Greensward Drive.  
Valley Cottage New York 10989

**BBQ Help Needed**

We have BBQs after every Hessian Lake dive, but next year, we don't want the chef tasks to fall on the same people all the time, so we are asking for your help. If you plan on coming to the Hessian Lake dives, please consider offering to set up, cook, or break down the BBQ gear.

**Setting up** might mean you set up before diving, get out of the water first, or forego diving that day. **Cooking** means you cook for everyone who shows up, not just yourself & your friends. **Breaking down the BBQ gear** means you stay until everyone has eaten and the grill is cool enough to put into your car to store until the next dive.

You don't have to be a Board Member to help. Everyone can pitch in. Any expenses, like buying food, are reimbursable. So please look at the dive dates and let us know when you can help out.

Thank you

Don't Forget to Visit EmbroidMe for your Rockland Aquanauts Apparel

**EmbroidMe-Nanuet**

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**January 2009**

Hope for Coral Reefs, Diver Fitness, Polar Plunge, GPS For Divers, Membership Dues

**\*\*There Will be NO January Meeting \*\***