



The San Juan Star

THE ONLY PULITZER PRIZE-WINNING PUBLICATION IN PUERTO RICO

\$1.25

Experts: Damage is due to prolonged period of unusually warm waters

Coral bleaching is killing island reefs

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WORLD SERIES



White Sox beat Astros, 5-3, to take Game 1

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LOCAL NEWS

Loved ones look back on life of slain investor

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Wilma lashes México for 2nd day, targets Florida



Residents of Cancún, México, walk among the ruins of a house on Saturday after Hurricane Wilma pummeled the Yucatán Peninsula for a second day. With Wilma taking aim at Florida, a hurricane watch was issued there; meanwhile, a record 22nd tropical storm formed southwest of Puerto Rico and was heading toward Hispaniola.

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Experts: Coral bleaching killing P.R. reefs

Caused by prolonged period of unusually warm waters

BY JON RUST
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OF THE STAR STAFF

A prolonged period of unusually warm waters around the coasts of Puerto Rico have sparked a massive and unprecedented coral bleaching event that is killing the island's reefs, scientists and environmentalists say.

According to preliminary estimates, 90 percent to 95 percent of Culebra's corals are suffering from bleaching, said Dr. Edwin Hernández Delgado, of the University of Puerto Rico's Coral Reef Research Group.

"It's something I've never seen before," he said in a phone interview after surveying permanent reef monitoring stations Thursday in Culebra. "Some have gone completely white."

Bleaching occurs when corals get stressed by hot water and the algae that live inside them, which give them color and supply them with food, are expelled.

Reefs can recover from bleaching, but with weeks of hot water many of the corals off the small island have started to die, he said.

The last major bleaching event here, in 1998, affected about 60 percent to 75 percent of the island's corals, but "this is unprecedented," he said.

Nearly 80 species of hard and soft corals like sea fans, as well as anemones, have been affected, he said.

And Culebra's reefs are not alone: Vieques has been hit as well, and Hernández and a National Weather Service marine specialist said they have seen bleaching in the San Juan area.

In shallow waters off Fajardo there is a "major mortality event," Hernández said.

"We're talking about hundreds or thousands of square meters that are dead, completely dead," he said.

Coral reefs serve as a breeding ground and habitat for innumerable species of fish and other animals, attract tourists and protect the coast from large waves and erosion. They also nourish the region's beaches.

They recover from bleaching, as most here did after the 1998 event, if the waters temperatures return to normal in a fairly short amount of time.

But the National Oceanic and Atmospheric Administration first reported the unusually warm waters and bleaching in Puerto Rico and the Virgin Islands in late August.

In late September, the World Wildlife Fund for Nature reported widespread bleaching off Cuba, Barbados and Florida as well.

On Thursday, experts first documented the death of corals in Culebra, including mortality among species where bleaching has never been seen before.

"It's not good," said Mary Ann Lucking, head of the Culebra



The reefs off the island of Vieques, pictured, are bleaching, as are corals in the Virgin Islands, scientists say.

group Coralatons. "The temperatures have come down but we're still in a heavy bleaching event, and now we're seeing mortality."

According to the National Weather Service, ocean temperatures have been as much as 5 degrees above normal for six to eight weeks.

"It's incredible. Everything's white," Lucking said. "I've never seen anything like it."

The event is affecting "more species than has ever been documented," Lucking said, and the result could be a "massive die-off" — not just here but throughout the northeastern Caribbean.

A warning for island reefs

In late July, NOAA's coral reef monitoring network issued a watch for Puerto Rico reefs, meaning they were at risk from high temperatures. Then, in August, officials issued a warning, meaning reefs were undergoing thermal stress.

On Aug. 30, NOAA reported "a large bleaching event" in Culebra, Vieques and eastern Puerto Rico.

Last month, air temperatures in Puerto Rico averaged 1.7 degrees above normal, according to the NWS, and NOAA began picking up water temperatures well above 86 degrees Fahrenheit, the threshold for bleaching. From August to mid-October, the average water temperature normally is 83 to 84 degrees, NWS marine specialist Scott Stripling said.

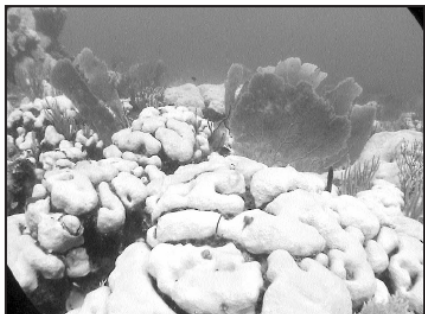
Temperatures in shallow water near Fajardo have soared to 90 degrees, Hernández said.

The water temperatures have dropped about 1 to 1.5 degrees in recent weeks, but "we're still over the threshold for bleaching," Hernández said.

Trade winds slowdown

Stripling said there's been a change in atmospheric patterns in the Atlantic this year: The cooling easterly trade winds have weakened, and a broad region of low pressure has dominated in the region as a result of warmer waters.

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When corals are stressed by hot water, they expel the symbiotic algae that give them their color.



According to a UPR researcher, 90 to 95 percent of Culebra's corals are suffering from bleaching.



This "brain coral" has turned white from the unusually warm water temperatures this year in the Caribbean.

Local Briefs

ARCHBISHOP URGES ASA TO PAY FEES FOR HEALTH PLAN TO PROTECT WORKERS

San Juan Archbishop Roberto González Nieves, who presides the Board of Directors for the Aqueduct and Sewer Authority's medical plan, urged ASA to pay fees for the plan so the 16,000 people covered by it are not affected.

González Nieves said he was surprised by a letter sent to him by ASA board chairman Miguel Nazario informing him that ASA would not pay \$6 million for the plan for June to October.

He said the decision is "criminal" and would threaten the health of thousands of workers and their families.

When it surfaced earlier this year that medical plan funds were apparently being misused, ASA said it would stop supporting the union health plan, then agreed to allow workers to choose between a private plan and the union plan. The board González Nieves heads was created at the time, and he said it has complied with all requirements of the Insurance Commissioner's Office and ASA.

He said the federal charges of embezzlement and indictment this week of 11 leaders of the Independent Authentic Union are unrelated to the medical plan board.

He urged the "immediate" payment of the funds and said ASA has a "moral and legal obligation" to continue to support the medical plan.

AAV EXPANDS LIST OF EMERGENCY ITEMS

Gov. Acevedo Vilá signed into law Saturday a bill expanding the number of products considered items of first need in an emergency, the prices of which are frozen by the Department of Consumer Affairs if necessary.

The list includes storm

shutters and service for repairing or installing them; screws and nails; wood panels; rope; tools; generators and cisterns and related services and parts; portable stoves; tents; batteries and lanterns.

SOME 69 PUBLIC SCHOOLS LOSE ACCREDITATION

Some 69 public schools have lost their accreditation, Education Counsel General Juan Bigio Ramos said Saturday.

And as of Oct. 10, only 423 schools out of a total of 1,523, or 28 percent, have been accredited, he said.

The lack of loss of accreditation is related to the number of schools the Education Department considers a priority for compliance with an improvements plan under the federal No Child Left Behind Act, he said.

Bigio Ramos said one of the reasons for the loss of accreditation was the inability of the schools to obtain endorsements from government agencies including the Fire and Health departments.

"The number is low in terms of accredited schools, but many go through the process of accreditation — it's offered for five years — and then don't go back and go through the reaccreditation process," he said.

About 100 more schools were to be accredited by May 2006, the end of the school year, but only 50 now can be because of financial reasons, he said.

From STAR Staff and wire reports

CORRECTIONS & CLARIFICATIONS

■ A Page 6 headline in Saturday's edition should have stated that former Juvenile Institutions Administration chief Miguel Rivera's bid to have money laundering charges against him dropped was denied.

► From Page 4
Anhang

The born businessman

"He was outstanding," Reid Liffmann, who met Anhang at the Wharton School of Business at the University of Pennsylvania, wrote at www.adamanhang.com.

"Although 10 years younger than most of the students in the class — we all were in awe of him. He was a doer, a builder, an optimist while at the same time pragmatic," he said.

Anhang graduated from Wharton at the age of 22. During the eulogy, his sister also noted how he would constantly keep in touch with his stock broker — in high school — and ran a greeting card business from his college dorm room.

In his mid-twenties, he went out on his own, starting a consulting business in

which he helped all different kinds of companies recover from dire financial straits," Rebecca Anhang added.

His main business ventures in recent years included teaming up with local developer Roberto Cacho, with whom he was working on several projects in Puerto Rico through S&K Development Partners.

At the time of the Canadian's death, the duo was working on two multi-million dollar mixed-use projects in Condado, called Laguna del Mar and the Regency Condado Centre, as well as the development of a complex of villas in land they own in Boquerón.

Cacho describes Anhang as the creator of the online gambling industry. He founded and was CEO of an online gambling company based in Costa Rica, CWC Gaming, which has contracts with some of the largest Internet gambling companies.



Jonathan Román Rivera

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Corals

That has further suppressed the trade winds, which generate currents that cause the vertical mixing of warmer surface waters with cooler deep waters.

The result, he said, is "a very deep pool of very warm water" around the northeastern Caribbean. It has shifted somewhat to the southeast, but the island is still at the fringes, he said.

The warm waters contributed to the formation of the 25th tropical depression of the year, which formed south of the island Saturday and was expected to hit Hispaniola as Tropical Storm Alpha.



The Luis Peña Channel marine reserve in Culebra

Outside of eastern Puerto Rico and the offshore islands, the state of reefs has yet to be determined, but Stripling said bleaching in the Punta Las Marias area is "very evident" and Hernández said that during a dive in Isla Verde back in mid-August he saw bleaching down to depths of 80 to 90 feet.

Hernández said he and other scientists have only begun researching the death of corals in the current event and that the extent is not yet known, nor is the effect on fish and other species.

However, he said, "the mortality we're starting to observe is going to be spreading — we're talking about destroying the house of the fish. Of course it will affect the associated communities" of animals.

Stripling said the trade winds have picked up in the last week or so, and "we're starting to get a little mixing" of warmer and cooler waters.

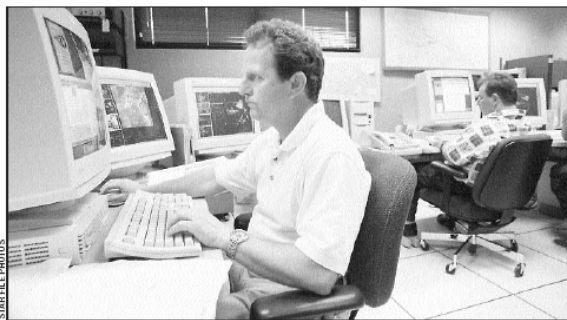
"We probably reached our peak, and it has diminished. However," he said, "there's still a very large pool across the Caribbean with [sea surface temperatures] in excess of 86 degrees."

And, he said, NOAA's long-term climate forecasts for the next nine months suggest continued weakening of the trade winds that fuel the currents that mix ocean waters and keep them — as well as the island — relatively cool.

"If that's the case, then you can make an educated assumption that the warm sea surface temperatures have a reasonable chance of returning next season," he said.

Long-term forecasts are full of uncertainty, and the outlook is only "conjecture," Stripling said.

"But that's certainly something to take into consideration," he said.



Meteorologists at the National Weather Service's San Juan bureau. According to a NWS marine specialist, ocean temperatures here have been above normal for six to eight weeks.

Look for our

Travel

Section

on Saturdays