

Ocean Care Foundation Shows the beauty of coral, expresses concerns about its health

By Wim Hart

The beauty of St. Maarten is not only evident on the surface, but also below the surface and we want the people to know this, Jesus Ruiz said in a recent interview. "We" are the volunteers of local nature organisation Ocean Care Foundation and Ruiz is its President. Established in May 2004, the Foundation can currently count on some 15 to 18 volunteers, who pick up their dive gear twice or three times per month to go down and collect the latest information about the health of coral reefs in our local waters. They are concerned: Amidst all the beauty, there is much bleach down there and the situation is not getting any better.

In its efforts to try and turn around the tide, Ocean Care Foundation is in touch with Tom Goreau, a US coral expert, with whom they investigate the possibilities to establish what they call a "Biorock," an innovative programme to create artificial reefs or to resurrect dying coral reefs. The Ocean Care spokesman explains in brief that the basis of biorock is a metal frame and through the use of electricity in a very low voltage (generated by solar energy, wind energy, or other types of energy) coral grows faster and healthier than with other types of artificial reefs.

Volunteers check the presence of different types of coral reefs, invertebrates, fish and coral diseases in the local waters, using a 100-metre, 'coral-friendly' line, checking every 50 centimetres along that line over the total distance of 100 metre, according to the protocol and making notes on their data sheets.

The most important question Ocean Care wants to find an answer to is: *Coral Reefs—Will they survive?*

They explain that corals may look like plants, but they are actually made up of many tiny, fragile animals, called coral polyps. The body of a



Coral bleach in St. Maarten waters.

The massive reef building visible through the polyps' even white. The coral polyps

will all negatively affect the state of the reefs.

Together, these impacts, especially combined with increased coral bleaching, pose a serious threat to the survival of the world's coral reefs.

There is unfortunately no cure for coral bleaching. Therefore, Ocean Care urges managers and policy makers to help protect remaining reefs and stimulate recovery. Where bleaching has occurred, management to eliminate additional stress or damage is increasingly important. This includes reducing pressure from over-fishing, tourism, land-based sources of pollution and development. Protection of the living coral is of the utmost importance, since these will be crucial to future reef recovery both locally and elsewhere.

Reefs are important

Coral reefs are important components of the beach system, because they are natural breakwaters: they absorb much of the incoming wave energy and help protect the shoreline from wave attack. Without wave buffering and sand production that coral reefs provide, rates of coastal erosion will be much higher. Coral reefs are also important to many beaches because they act as a sand source.



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Parrotfish

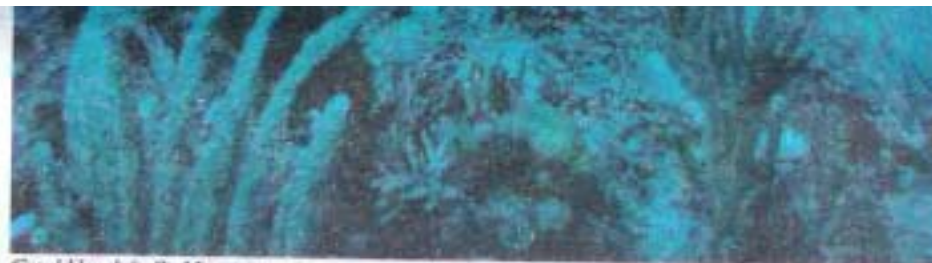
The contact with Goreau is still in its early stages and whether or not the project can be realised depends on funding, among other things. Meanwhile, the Foundation volunteers will continue to go out on a boat equipped with their dive gear, data sheets and other tools to check the coral reefs using the protocol of international volunteer, ocean conservation organisation Reef Check. Under this protocol Ocean Care volun-

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The massive reef building corals are the slowest growing species, and growth 5-25 mm (0.2-1 inch) per year. Polyps obtain food in two ways: firstly, by using their tentacles to catch tiny floating plankton. Secondly, through tiny algae (called zooxanthellae) that live in symbiosis within the coral polyps. The algae provide energy through photosynthesis (by using sunlight, just like plants), and as much as 90 per cent of the polyps' carbon requirements. In reef building corals, the combination of photosynthesis by the algae and other processes in the coral leads to the formation of their limestone skeleton

Most corals have clear bodies and their limestone skeletons are white. The corals get their colour from the algae inside them, which produce pigments. These pigments are visible through the polyps' clear body and give the corals their beautiful colour.

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Coral Bleaching

"A problem we are facing at the moment is a massive coral bleaching event," the Foundation spokesman says. In previous weeks, Ocean Care's volunteers have seen various dive sites with affected corals. This has been confirmed by local dive operators. Indeed, not only on St Maarten, but all over the Caribbean corals are losing their colour.

Coral bleaching is caused by high sea surface temperatures (1-2 degrees Celsius above normal maximum temperature), combined with high levels of sunlight and sustained low winds. These conditions cause the algae inside the coral to be expelled, so that coral loses its colour and turns pale or

even white. The coral polyps will not be able to survive without the algae for long periods, and prolonged bleaching conditions (for over 10 weeks) can eventually lead to death of coral polyps. Bleached coral colonies, whether they die totally or partially, are more vulnerably to algal overgrowth, disease and reef organisms that bore into the skeleton and weaken the structure of the reef. If mortality is high, bleached reefs rapidly change from their snowy white to a dull grey-brown, as they are overgrown with algae.

Global warming
The intergovernmental panel on climate change has predicted an increase of 1-2 degrees Celsius in sea surface temperature over the next 100 years, meaning that coral bleaching events will become a regular event in the next 30-50 years.

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Other human impacts continue to threaten the survival of coral reefs. Coastal development, poor land use practices, over exploitation of main resources and destructive fishing methods - as well as sewage or waste disposal and pollution from land and ships

breakwaters: they absorb much of the incoming wave energy and help protect the shoreline from wave attack. Without wave buffering and sand production that coral reefs provide, rates of coastal erosion will be much higher.

Coral reefs are also important to many beaches because they act as a sand source. Many fish actively feed on the coral. For example, the parrotfish can bite off chunks of coral, digest the living material and excrete coral sand. Butterfly and triggerfish also feed on the coral. As a result, sand is formed, which may eventually end up on the beach.

Many years

There is often a time lag of several years before the effects of coral reef damage are seen on the beach. It may take many years before the damage to a coral reef is manifest on the beach. If a reef is lowered by a hurricane, it may not be until a next storm that the reduced breakwater effect is evident through worsening beach erosion.

Thus, besides being valuable in their own right, coral reefs are vitally important for many Caribbean beaches, and every effort must be made to protect and conserve them.

People who wish to sponsor Ocean Care Foundation and/or who wish to receive more information can email: oceancare@caribserve.net

