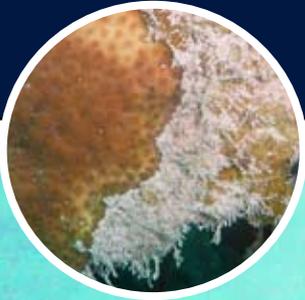


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Newsletter of the CARMABI foundation



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Editors note

Welcome to the second Carmabi newsletter of this year in which we will focus on several items like the problem of coral bleaching this year in the Caribbean, the coming arrival of the Lion Fish, one of the most feared invasive species which is spreading in the Caribbean and is expected to arrive on St. Maarten/ St. Eustatius and Saba at the beginning of 2010 and will also soon be spotted in the waters of our island. We put a light on one of our new volunteers, mr. Laurent Delvoye and illustrate our up to date popular Facebook page of Christoffelpark (850 fans and counting). And of course we'll share the latest on the Clear Water Challenge 2009 in which Ryan de Jongh will once again put a major achievement for nature protection by kayaking from St. Maarten to Curaçao, a total of 1606 km in 21 days starting November 1st 2009.

All in all, enough to read about and of course we would like to hear your comments or questions about this newsletter. Mail us at info@carmabi.org.

Have a good read!
The editors



Cover Photo:
Trunk fish
Picture by: M. Vermeij

NOAA: Coral Bleaching Likely in Caribbean

Scientists from NOAA's Coral Reef Watch Program say conditions are favorable for significant coral bleaching and infectious coral disease outbreaks in the Caribbean, especially in the Lesser Antilles. The forecast is based on the July NOAA Coral Reef Watch outlook, which expects continued high water temperatures through October 2009.

Scientists are concerned that bleaching may reach the same levels or exceed those recorded in 2005, the worst coral bleaching and disease year in Caribbean history. In parts of the eastern Caribbean, as much as 90 percent of corals bleached and over half of those died during that event." "Just like any climate forecast, local conditions and weather events can influence actual temperatures. However, we are quite concerned that high temperatures may threaten the health of coral reefs in the Caribbean this year," said C. Mark Eakin, Ph.D., coordinator of NOAA's Coral Reef Watch. Prolonged coral bleaching of more than a week can lead to coral death and the subsequent loss of coral reef habitats for a range of

marine life. It also affects local economies and tourism. "By providing local officials with advance warning that a bleaching event is about to occur, some steps can be taken to protect the corals," said Eakin. "Possible responses include mobilizing monitoring resources to measure extent and impact of bleaching, and establishing temporary restrictions on other reef uses like diving, boating and recreational fishing, to keep these activities from adding to the stress of higher sea temperatures already affecting the coral reefs."

There is also potential for similar conditions in the central Gulf of Mexico and a region stretching from the Lesser Antilles to Puerto Rico, across to the southern coast of Hispaniola and the Caribbean coast of Nicaragua. Other areas of concern are the central Pacific region including the equatorial Line Islands and Kiribati. Some heat induced stress may also develop between the Northern Mariana Islands and Japan. Coral bleaching is associated with a variety of factors, especially increased ocean temperatures. This causes the coral to expel symbiotic micro-algae living in

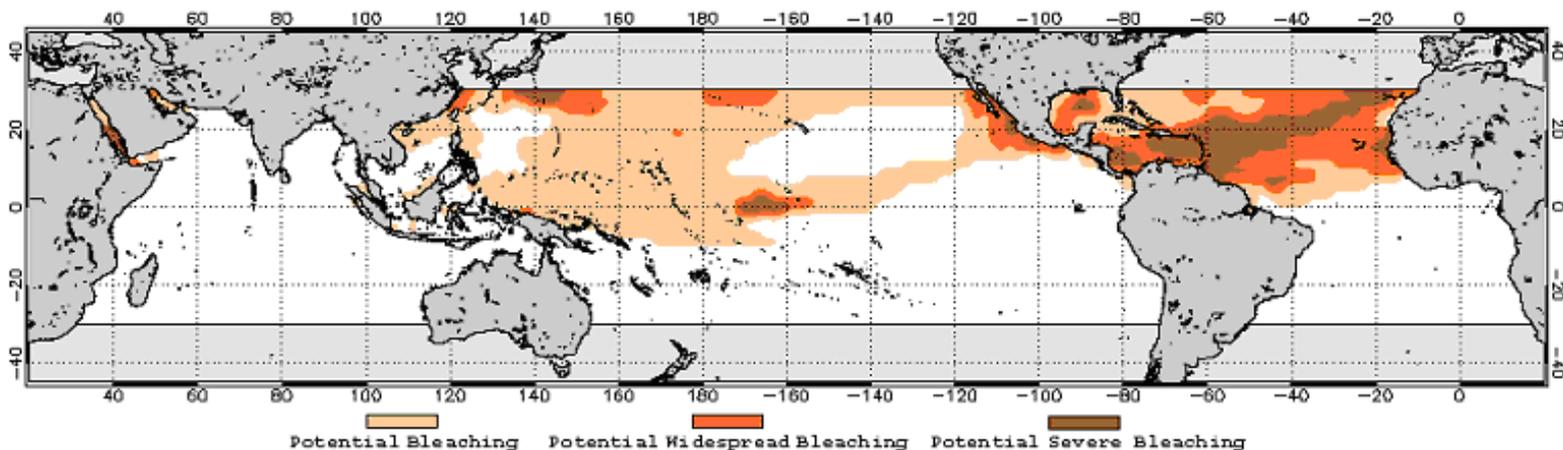
their tissues – algae that provide sustenance for coral. The loss of algae leaves coral tissue devoid of color, making it appear bleached. The bleaching risk may in fact be higher in certain regions than in this initial forecast as the model used for the outlook does not account for El Niño, something NOAA's operational Climate Forecast System indicates is likely over the next year. If El Niño continues to strengthen, this could increase the bleaching risk in the central to eastern Pacific and Caribbean. NOAA's National Climatic Data Center also reported that in June the world's ocean surface temperature was the warmest on record.

Source: NOAA



"Star coral with bleaching and sediment." Picture by K. Marhaver

2009 Jul 21 NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook for Jul–Oct 2009



Lionfish Decimating Other Tropical Fish Populations, Threaten Coral Reefs



The invasion of predatory lionfish in the Caribbean region poses yet another major threat there to coral reef ecosystems – a new study has found that within a short period after the entry of lionfish into an area, the survival of other reef fishes is slashed by about 80 percent.

Aside from the rapid and immediate mortality of marine life, the loss of herbivorous fish also sets the stage for seaweeds to potentially overwhelm the coral reefs and disrupt the delicate ecological balance in which they exist, according to scientists from Oregon State University. Following on the heels of overfishing, sediment depositions, nitrate pollution in some areas, coral bleaching caused by global warming, and increasing

ocean acidity caused by carbon emissions, the lionfish invasion is a serious concern, said Mark Hixon, an OSU professor of zoology and expert on coral reef ecology.

The study is the first to quantify the severity of the crisis posed by this invasive species, which is native to the tropical Pacific and Indian Ocean and has few natural enemies to help control it in the Atlantic Ocean. It is believed that the first lionfish – a beautiful fish with dramatic coloring and large, spiny fins – were introduced into marine waters off Florida in the early 1990s from local aquariums or fish hobbyists. They have since spread across much of the Caribbean Sea and north along the United States coast as far as Rhode Island.

This is a new and voracious predator on these coral reefs and it's undergoing a population explosion," Hixon said. "The threats to coral reefs all over the world were already extreme, and they now have to deal with this alien predator in the Atlantic. These fish eat many other species and they seem to eat constantly." Findings of the new research will be published soon in *Marine Ecology Progress Series*. The lead author is Mark Albins, a doctoral student working with Hixon. In studies on controlled plots, the OSU scientists determined that lionfish reduced young juvenile fish populations by 79 percent in only a five-week period. Many species were affected, including cardinalfish, parrotfish, damselfish and others. One large lionfish was

observed consuming 20 small fish in a 30-minute period.

Lionfish are carnivores that can eat other fish up to two-thirds their own length, while they are protected from other predators by long, poisonous spines. In the Pacific Ocean, Hixon said, other fish have learned to avoid them and they also have more natural predators, particularly large groupers. In the Atlantic Ocean, native fish have never seen them before and have no recognition of danger. There, about the only thing that will eat lionfish is another lionfish – they are not only aggressive carnivores, but also cannibals.

“In the Caribbean, few local predators eat lionfish, so there appears to be no natural controls on them,” Hixon said. “And we’ve observed that they feed in a way that no Atlantic Ocean fish has ever encountered. Native fish literally don’t know what hit them.”

When attacking another fish,

Hixon said, the lionfish will use its large, fan-like fins to herd smaller fish into a corner and then swallow them in a rapid strike. Because of their natural defense mechanisms they are afraid of almost no other marine life. And the poison released by their sharp spines can cause extremely painful stings to humans – even leading to fatalities for some people with heart problems or allergic reactions.

“These are pretty scary fish, and they aren’t timid,” Hixon said.

“They will swim right up to a diver in their feeding posture, looking like they’re ready to eat. That can be a little spooky.”

Their rapid reproduction potential, Hixon said, must now be understood in context with their ability to seriously depopulate coral reef ecosystems of other fish. Parrotfishes and other herbivores prevent seaweeds from smothering corals. A major, invasive predator such as lionfish could disrupt the entire system.

Options to manage the lionfish threat are limited, Hixon said. They can be collected individually, which may be of localized value, but that approach offers no broad solution. Recovery or introduction of effective predators might help. Groupers, a fish that has been known to eat lionfish in the Pacific Ocean, have been heavily over-fished in the tropical Atlantic Ocean, Hixon said.

“We have to figure out something to do about this invasion before it causes a major crisis,” Hixon said.

“We basically had to abandon some studies we had under way in the Atlantic on population dynamics of coral reef fish, because the lionfish had moved in and were eating everything.”

OSU scientists say they hope to continue research on lionfish in their native Pacific Ocean habitats for information that may be of use in their control.

Source: OSU

Laurent Delvoe volunteers at Carmabi



Drs. Laurent Delvoe works for CARMABI as a volunteer since June 2nd 2009. He studied medical biology at the University of Utrecht and his field of specialization is medical histology/pathology.

After his retirement as a biology teacher in 2007 he was invited by Dr. Rolf Bak and Dr. Maggy Nugues from NIOZ to do the histology of diseased corals from Indonesia, mostly of the genus *Acropora*. After that he and his wife visited Australia for a few months. Invited by Dr. Dolfi Debrot, he is now involved in the Biodiversity Database by editing texts, also making and managing photographs for it. Repairing and restoring the microscopes in the institute is another task. In addition, he facilitates guest researchers from abroad when needed. And with Dr. Mark Vermeij, in collaboration with Dr. Rolf Bak and Dr. Maggy Nugues, a histological study of

the Caribbean *Acropora* has been started. The results obtained will be compared with the results from the Indonesian *Acroporas*. It is not the first time that Laurent is in Curaçao. In the fifties he grew up here. As a student he did in 1980/81 work on coral reproduction on Carmabi. In 1988, 1992, 1993, 1998 and 2000 he worked here again on endolithic algae in coral skeletons, coral tissue fluorescence and for a European sponge project. Most of this work was funded by WOTRO/NWO, a number of publications were the result. How long Laurent will stay at CARMABI is not yet decided, but it will be at least half a year, maybe a year.

Christoffelpark on Facebook

facebook BECOME A FAN!



Worldwide more and more businesses and NGO's launch their information on the popular Facebook, the network linking millions of people all over the world, and as such increasing the sharing of information. After organizations such as Arikok National Park in Aruba, Christoffelpark now also owns its own page on facebook, giving fans the chance to join and be kept up to date on activities and events, participate in discussions on nature related topics and enjoy photo's of the park, and even

uploading photo's themselves. The Facebook application promises to be a handy extra marketing and PR tool next to the new website of Christoffelpark which will be launched soon. Everyone can join the fanbase of Christoffelpark, by becoming a member of facebook and searching for the page, Christoffelpark, Curacao. The direct link to the fanpage is www.facebook.com/pages/Curacao-Dutch-Caribbean/Christoffelpark-Curacao/107419611605

1-hour pickup safari



For everyone interested in visiting the park and exploring it with our rangers, with enough time to spare to visit the beaches at Banda Bou, the 1-hour pickup safari is the perfect activity. Starting every Sunday at 9 and 11 AM at the official entrance to

the park, the short but exciting safari is a perfect compliment to a perfect day. And at only Naf.10 per person (US\$6), it will not cut a hole in your wallet. Please call the park for reservations at (5999) 540-3604 or (5999) 864-0363 or mail info@carmabi.org.

Mountain bikes sponsored by ENNIA



Representatives of ENNIA test out the new mountain bikes before enjoying a fun safari trip with our rangers.

Rent a Mountain bike for US\$20 or Naf.35 for ½ day (4 hours). This includes all safety equipment, a map of the park and the general entrance fee. If you want a guide, an additional Naf.50 per group will be charged.

*Reservations:
(5999) 864-0363
(5999) 540-3604
info@carmabi.org*

Caribbean Kayak Challenge for Safeguarding Curaçao's Biodiversity

Rationale

Curaçao is an oceanic Island with a surface area of 444 square kilometers, located along the southern edge of the Caribbean plate. Its geological history dates back some 87 million years, which makes it much older than the islands of the volcanic island arc of the lesser Antilles. This fact, combined with its position within a semi-arid climate zone, produced a unique island ecology within the Caribbean, supporting a range of endemic species and sub-species, which means that those species are found nowhere else in the world.

A significant subset of the unique diversity of the Island has been encapsulated within the Christoffelpark. This park encompasses 2300 hectares of relatively untouched hillsides, including the 375 meters high Christoffel mountain, the highest point of the Island. Historical artifacts from pre-Columbian and colonial times are also part of the heritage found within the park, including Indian rock drawings and the former plantation complex of Savonet, one of the oldest and most complete and authentic plantation complexes remaining on the Island, also unique within the Caribbean cultural and historical context.

The park is managed by the CARMABI Foundation, a 55 year old non-profit ecological research and management organization with the aim to protect the natural environment and to assist in sustainable development of the Island. The park itself is owned by the local government, as are some of the surrounding areas. The park is the center-piece of a bigger

area, covering most grounds in the western part of the Island, which currently is designated as a conservation area by law. However, this designation does not provide a sufficiently stable protection scheme, because of the fact that development pressures are mounting. Furthermore, currently the park is only directly connected to the northern marine shores with its sargassum fields. No protected and managed areas connect the park to the south coast, along which valuable coral reefs are located.

In order to reinforce the regional scientific knowledge base, Carmabi also aims to implement an improved knowledge centre both in order to attract more visiting scientists to the Island as well as to do scientific research specifically tailored to local and regional nature management issues. This centre will provide the visiting scientists and students with the necessary scientific infrastructure, like a laboratory but also dorms and a full equipped library with all necessary publications, to carry out their projects efficiently. Curaçao has ideal characteristics for such a scheme: good connections from the Americas and Europe make it easy to get there, the Island is politically stable and safe, and most importantly: the ecosystems the scientists are most interested in, the coral reefs and related coastal systems, are (still) in good shape, which cannot be said of most Islands in the Caribbean. Curaçao is the perfect “natural laboratory” at which the scientific community can learn about the “ins and outs” of “hot” topics like the effects of climate change, but also about the medicinal

facebook JOIN THE CAUSE!



Ryan's Challenges over the years:

- Kayak from Playa Kalki (Westpoint) to Sea Aquarium Curacao (19 hours, 1998)
- Biking 500 km for Korsou500 (30 hours, 1999)
- Extreme Triathlon (27 hours, 2000)
- Kayak Bonaire – Curacao (13 hours, 2000)
- Kayak Curacao – Aruba (22 hours, 2001)
- Running & walking 150 km on Aruba (23 hours, 2002)
- Kayak 150 km around Curacao for Carmabi (33 hours, 2007)
- Kayak 40 km, mountain biking 20 km, hiking 40 km for Carmabi (2008)
- **Kayak 1606 km (estimated time, 22 days) St. Maarten – Curacao**

Departure: November 1st 2009 for Carmabi

properties of marine organisms! The funding to build improved premises, the new “Carmabi scientific club house”, has already been secured, an amount of 2 million guilders, provided by Dutch development funds. The structural funding for the scientific staff and maintenance personnel should come out of income generated through the scientist, but most importantly

through (structural) funding provided by the private sector. The Carmabi knowledge centre will develop into “the place to be in the Caribbean” at which applied biological sciences and “green” corporate sponsorship can and will go hand in hand.

In order to safeguard a significant section of Curaçao's natural resources, both marine and

terrestrial, the Clear Water Challenge aims to collect sufficient funding to acquire the most unique and ecologically valuable terrestrial areas within the western part of Curaçao, in order to secure those areas for future generations, separated from political influences and arbitrariness. Furthermore, a trust fund will be set up, which will provide structural funds for the daily management of these areas, as well as for the scientific research necessary for the sustainable usage of the Islands natural resources, to the benefit of all future generations.

The golden thread through the Clear Water Challenge will be a monumental Kayak challenge, taken on by Ryan de Jongh who will leave St. Maarten on November 1st to cross a distance of 1606 kilometers through Caribbean waters, to arrive at his home port around three weeks later.

A kayak challenge for nature; a challenge for the survival of the biodiversity of Ryan's home; a home he, and many with him, consider a FORGOTTEN PARADISE!

CARMABI Sponsors



- Percy Henriquez Fonds 5000 euro for new websites
- Percy Henriquez Fonds 5000 euro for new pier
- Prins Bernhard Fonds +/-Naf. 9000 for boat motor
- Orco Bank Naf. 1000
- Curoil Naf. 15.000
- VIP.com Naf. 4500
- Centrum Supermarket Naf. 1000
- Farminpex Naf. 1000
- Hotel Otrabanda Naf. 1500
- KTK Naf. 2500
- CPA Naf. 2500
- Selikor, garbage collectors Hato caves
- Carmabi friends Naf. 1150 (collection birthday party Dolfi Debrot)

