

Marine biodiversity research expedition on Bonaire

An international research team is on Bonaire from 21 October to 9 November to investigate its marine biodiversity. Although Bonaire's reefs are well monitored, their marine biodiversity has not been well explored. Since Bonaire is rich in marine habitats, it has a high potential for the discovery of rare species or even species new to science. Eventually, the team hopes to say more about how species diversity is distributed around the island and how it compares with that of other Caribbean islands.

Bonaire's reefs are a famous tourist attraction but are threatened by a number of local and regional pressures such as climate change effects, free roaming livestock, invasive exotic species, coastal development, erosion and eutrophication by waste water. It is important to improve the resilience of the coral reefs so that they are better able to withstand the effects of climate change, such as warmer seawater (coral bleaching) and extreme weather conditions (longer periods of drought and more powerful hurricanes). Important management considerations include implementing coastal protection through spatial planning, reduction of erosion through reforestation of indigenous trees and shrubs, reduction of free roaming livestock and protection of particular species.

Instead of monitoring the coral cover, the research team will focus on topics that are related to the presence or absence of particular species. It is essential to know which species need protection, while other species can be harmful to others and these should also be known. Indeed, some associated animals can damage their hosts, especially when they occur in high densities, like Christmas tree worms. Some species of crabs, shrimps, and snails are completely depending on the presence of a few species of host organisms, such as coral and sponges, which they use as a habitat to live in. If a host species disappears, then its associated species become extinct as well.

Since the team also has research experience in other Caribbean localities, it may perhaps be able to find species that have never been observed in Bonaire before, or it may observe that some species that are generally rare in the Caribbean, can be found abundantly in Bonaire. In other localities, which were visited in previous years, the team found species that were new to science or represented new records for the Caribbean. The latter can be important in order to detect the presence of introduced species, which potentially can become invasive.

Each team member brings his/her own expertise regarding marine animals and plants.

Some members are specialized in well-known groups of organisms, such as corals, sponges, and algae, while others know about species that are not easily found because they concern animals that are usually well hidden, small, or camouflaged. Most team members are from the Netherlands, but others are from Italy, Japan, Puerto Rico, Russia and the USA. Part of the Dutch team is based at Naturalis Biodiversity Center (Leiden) and the others are representatives of ANEMOON Foundation, which is specialized in monitoring marine species. The team collaborates with STINAPA and DCNA at Bonaire. The research is partly funded by the WWF Netherlands Biodiversity Fund.



Although Christmas tree worms are attractive animals, too many of them can be harmful when they overgrow their host corals (Curaçao, 2014).

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