

Mexico: Underwater Museum to Protect Coral Reefs



Four sculptures in human forms, made of concrete, will be submerged in November in the Mexican Caribbean - the first of 400 figures that will comprise the world's largest underwater museum.

The Subaquatic Sculpture Museum will be situated in the West Coast National Park in the southeastern state of Quintana Roo, on the Yucatán Peninsula. The park receives nearly 300,000 visitors each year. The museum's mission is to attract some of those tourists in order to reduce the pressures on the important natural habitats in other areas.

The watery museum will become even more attractive when the sculpture area fills up with thousands of colourful fish. The concrete of the sculptures is pH neutral, which allows rapid growth of algae and incrustation of marine invertebrates.



"The underwater museum will draw many tourists, allowing us to give a rest to the natural reefs. It's like a restoration process," national park director Jaime González explained to this reporter. "By becoming healthier, the coral reefs will be more resistant to hurricane damage," he added.

The Intergovernmental Panel on Climate Change (PCC) has warned that extreme weather phenomena, like hurricanes, will become more intense and frequent as a result of global warming.

The panel also predicts higher acidity of ocean waters and consequent bleaching of coral, which can kill it.

"Coral bleaching is akin to us losing our skin pigment. The ultraviolet rays of the sun would harm us," explained Roberto Iglesias Prieto, of UNAM's (Autonomous National University of Mexico) Institute of Sea and Lake Sciences. "The whitening process stresses the coral, which expels the algae that live within it and which provide nutrition, leaving the coral to starve," Iglesias added. The coral also reproduces less and becomes more vulnerable to disease.

The phenomena associated with climate change threaten the survival of coral reefs around the world. In July, experts meeting at the Royal Society of London agreed that these important marine ecosystems could disappear within a century if climate-changing gas emissions aren't sharply reduced.

What would the world be like without coral? "On this planet, 200 million people make their living from fishing for species that inhabit coral reefs," said the UNAM expert. Another 300 million people benefit from reefs as a form of coastal protection. "In a hurricane, 99 percent of power in waves is dissipated in the reef, thereby protecting human lives and property," said Iglesias. "Given the global threat of climate change, local protection of reefs is very important," said the researcher. "We need to gain time against climate change, by curbing the number of tourists visiting coral reefs, for example," he said.



In the West Coast National Park of Isla Mujeres, Punta Cancún and Punta Nizuc, the challenge is to draw tourists away from natural habitats without losing the 36 million dollars the visitors bring into the area each year. Events in recent years have left clues on how to achieve that.

González recalls that in 1997 a cruise ship destroyed 500 square metres of coral of the Cuevones reef in Punta Cancún. Since then, all tourist access to the reef has been banned. As an alternative diving site, in 2005 the park administration submerged 110 hollow domes and concrete structures in layers to create an artificial habitat in the area known as Sac Bajo. "At first the people of Isla Mujeres told us that they were never going to bring tourists there, but after a few years it became a must-see attraction," said González.

Meanwhile, the Cuevones reef, where the cruise ship grounding occurred, is now the reef in the best condition in the area. "The only difference is that there are no tourists," he said. "If they swim near the corals, the divers with little experience might kick them with a fin or hit them with the oxygen tank," he added. "Before it was declared a park, the tourists even climbed up the corals and walked on top of them, breaking and shattering them," González said.

Now there are buoys that mark the borders and tourists must wear lifejackets to prevent them from submerging. Once the underwater museum opens, it will require divers to gain previous experience in artificial habitats.



With these measures, they hope to extend the lifespan of the coral and the services the reefs provide, including the production of the white sands for which Mexico's Caribbean beaches are famous - the result of natural erosion.

Corals also "have the potential to contain substances or pharmaceuticals that can be useful to humanity," says Ernesto Enkerlin Hoeflich, national commissioner of Protected Natural Areas in Mexico (CONANP).

"Furthermore, they act as carbon sinks (absorbing greenhouse gases) and, because of their

incredible beauty, they serve as a tourist attraction and an opportunity to reconnect with nature," said the commissioner. For these reasons, CONANP is supporting the Subaquatic Sculpture Museum with resources and by facilitating permits.

Last year, the commissioner himself went diving in the Caribbean waters to observe the results of the concrete structures submerged in 2005, which serve the same environmental principle as the statues.

"It's a unique experience... to witness the rapid colonisation of the spheres by thousands of fish of different species and to see how, although we sometimes damage nature, humans can also do something to restore it," said Enkerlin Hoeflich.

The national park director González calculates that by April 2010 there will be some 250 sculptures installed in the underwater museum. The total cost of the project is about 350,000 dollars. The artistic director is Jason de Caires Taylor, famous for his underwater sculptures, but other artists will also be involved.

The museum isn't expected to increase the flow of tourists to Isla Mujeres much, though most agree the site will provide a new identity for the park. Each sculpture will be human-sized, with a base of four square metres. There will be theme-based galleries as well.

One of them, "The Dream Catcher," will be the figure of a person who sorts bottles that arrive with messages sent by castaways. Another will be titled "Coral Collector". Also in the works is a series of sculptures depicting an army of Maya indigenous warriors.

Date: 2009-11-30

Article link:

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