



CAN-053-ROV Monitoring Coral Reefs-

India

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The World Federation for Coral Reef Conservation 281.971.7703 P.O. Box 311117 Houston Texas 77231

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Indian ROV Monitors the Health of Coral Reefs



A view of the ROV made by National Institute of Ocean Technology, Chennai.

Photo: Special Arrangement

Scuba divers who take a plunge into ocean floors to study coral reefs can now take a break. An indigenously developed remotely operated vehicle (ROV) is taking up their role with more efficiency and accuracy and it's expected to contribute significantly to the conservation and management of corals.

The National Institute of Ocean Technology (NIOT), Chennai, had recently deployed the ROV for studying the coral reefs of the Andaman and Nicobar Islands, which are facing survival threats due to global warming.

While it would take weeks together for a scuba diver to diagnose the health of corals, the ROV could map a larger area in a day.

"The images of corals recorded by the ROV are useful for studying the biodiversity of coral reefs and their evolution. The underwater visuals had shown the coral debris and boulders caused by the 2004 tsunami and the rejuvenation of the colonies of branching corals, stony coral and brain corals at some locations," explained G.A. Ramadass, Head, Deep Sea Technologies Group, NIOT.

The coral reef biodiversity at Andaman region, which spreads across an area of 11,000 sq km, was seriously affected during the 2004 tsunami. The increasing sea surface temperature added to the stress. Currently, there is no mechanism other than scuba diving to examine the corals and assess the extent of damage or rejuvenation," explained Dr. Ramadass.

According to the experts, no evidence of coral bleaching was seen in Andaman reef during April 2016 when the ROV carried out a survey. However, the ecosystem needs to be monitored constantly to understand the impacts of raise in temperature, he said.



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Development of ROV

NIOT had earlier developed a deep water work class Remotely Operated Vehicle (ROV) ROSUB 6000 which was suitable for exploration in deep waters. It was successfully operated at a maximum depth at 5,289 metres in the Central Indian Ocean Basin. It also contributed to the exploration of deep ocean minerals such as gas hydrates, polymetallic nodules and hydrothermal sulphides, which occur at water depths ranging between 1,000 and 6,000 metres, said a communication from the institute.

A new miniaturised version of ROV, which could be effectively used for exploration and inspection up to 500-metre water depths, caters to the need of the research community and industry. It was also deployed for scientific research in Antarctica as a part of the 34th Indian Scientific Expedition to Antarctica during Jan-Apr 2015. It was deployed in the Lake Priyadarshini near the Indian permanent station Maitri and in the New Indian barrier ice shelf regions.

Though ROVs with similar depth rating and capabilities are available in the international market, many of them were not suitable for polar conditions. Also the scientific payload such as irradiance sensor, water sampler, sound velocity profiler, sector scanning sonar with the state of the art navigation systems makes the ROV a unique one, Dr Ramadass said.

<http://www.thehindu.com/sci-tech/science/indian-rov-monitors-the-health-of-coral-reefs/article9149517.ece>

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The only thing necessary for the triumph of evil is that good men do nothing"Edmund Burke