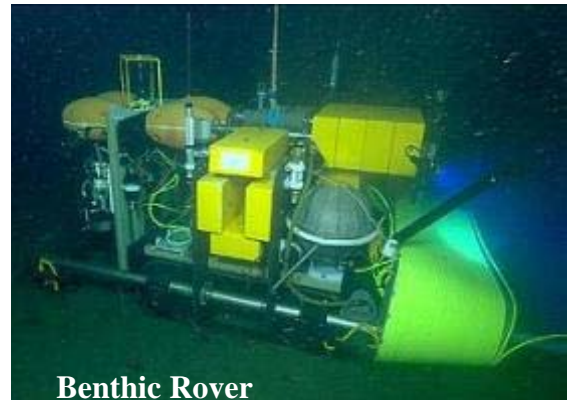


WINTER

Penzance B.S.A.C Conservation Officer's Report December 2009



A new robot travels across the seafloor to monitor the impact of climate change on deep-sea ecosystems. Like the robotic rovers Spirit and Opportunity, which wheeled tirelessly across the dusty surface of Mars, a new robot spent most of July travelling across the muddy ocean bottom about 25 miles off the coast of California. This robot, The Benthic Rover, has been providing scientists with an entirely new view of life on the deep sea floor. About the size and weight of a small compact car, the Benthic Rover moves slowly across the seafloor taking photographs and sediment in its path. Every 10 to 16 ft the rover stops and makes a series of measurements on the community of organisms living in the seafloor sediment. These measurements will help scientists understand one of the ongoing mysteries of the ocean – how animals on the deep sea floor find enough food to survive. Most life in the deep sea feeds on particles of organic debris, known as Marine Snow, which drift slowly down from the sunlit surface layers of the ocean. But even after decades of research, marine biologists have not been able to figure out how the small amount of nutrition in marine snow can support the large numbers of organisms that live on and in seafloor sediment.



Benthic Rover

Two recent expeditions led by Conservation International (CI) to the heart of Asia's "Coral Triangle" discovered dozens of new species of marine life including epaulette sharks, "flasher" wrasse and reef-building coral, confirming the region as the Earth's richest seascape.

The unmatched marine biodiversity of the region on the northwest end of Indonesia's Papua province, includes more than 1,200 species of fish and almost 600 species of reef-building coral, or 75% of the world's known total. Researchers described an underwater world of visual wonders, such as the small epaulette shark that "walks" on its fins and colourful schools of reef fish populating abundant and healthy corals of all shapes and sizes.



Epaulette shark

Researchers are one step closer to creating a micro-aircraft that flies with the manoeuvrability and energy efficiency of an insect after decoding the aerodynamic secrets of insect flight. The so-called 'bumblebee paradox' claiming that insects defy the laws of aerodynamics is dead. With this new research, modern aerodynamics really can accurately model insect flight. The researchers used high-speed digital video cameras to film locusts in action in a wind tunnel, capturing how the shape of a locust's wing changes in flight and used the information to create a computer model which recreates the airflow and thrust generated by the complex flapping movement. It means that for the first time engineers understand the aerodynamic



Locust in wind tunnel

secrets of one of nature's most efficient flyers—information vital to the creation of miniature robot flyers for use in situations such as search and rescue, military applications, and inspecting hazardous environments.

There were 7 reported sightings of dolphins during November, these were all off St. Ives and Hayle area and would have been the Bottlenose Dolphin pod. A large Risso's Dolphin was seen off Cape Cornwall on the first of the month and all the 12 reported sightings of Harbour Porpoises were around Penwith from St. Ives to Porthgarra except one which was seen off Kilcobben Cove near The Lizard. Grey Seals were reported 3 times all at Porthgwithen Cove at St Ives