



COASTAL ZONE MANAGEMENT AUTHORITY AND INSTITUTE

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COASTAL ZONE MANAGEMENT AUTHORITY AND INSTITUTE (CZMAI) IN PARTNERSHIP WITH THE UNITED KINGDOM'S NATIONAL OCEANOGRAPHY CENTRE DEPLOYS AUTONOMOUS VESSEL TO CONDUCT OCEANOGRAPHIC SURVEYS IN BELIZE

The Coastal Zone Management Authority and Institute (CZMAI) is hosting a team of Scientists and Engineers (15 persons) from the United Kingdom's National Oceanography Centre (NOC) from October 27- November 30, 2018 to conduct research activities along the Belize river and within the central Belize region.

On October 29, 2018, Scientists from the National Oceanography Centre (NOC) began a multi-disciplinary program of fieldwork in Belize that aims to help characterize the impacts of changes in land-use management on coastal environments. This is a collaborative research program through the UK Government funded Commonwealth Marine Economies (CME) Programme which has resulted in NOC scientists working alongside those in the Coastal Zone Management Authority and Institute (CZMAI), the University of Belize, and the Centre for Environment, Fisheries and Aquaculture Science (Cefas) in the UK.

Programme lead, Dr. Claire Evans, said "What happens on land impacts the ocean. This project will provide the best possible data on those impacts to support the management of natural resources by decision makers in Belize."

Globally, coral reefs are estimated to be worth around 9.9 trillion US dollars, and the Belizean coastal zone as a whole has been estimated to contribute over 350 million US dollars per year in services to tourism, 16 million US dollars to fishing, and 347 million US dollars in coastal protection. Information being generated through this new project will be included in the updating of the Belize Integrated Coastal Zone Management Plan (2016)- thus the outcomes will facilitate informed evidenced-based policy geared towards balancing tradeoffs between different activities and services within the coastal zone, and conservation of the vital ecosystems services it provides.

Planned activities involve comparing samples of river water taken in pristine natural environments with those taken from rivers flowing in areas that have undergone changes in land-use patterns. This will help inform decision makers about the impact of these changes in land-use on the quality of the water in rivers.



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To assess the impact of changing land-use on the coastal environment, the team has deployed a robotic unmanned boat to conduct oceanographic, bathymetric and hydrographic survey. This robotic boat known as the “C-WORKER” is part of the CAMEL (Containerised Autonomous Marine Environmental Laboratory) package of marine equipment, which also includes a mini Remotely Operated Vehicle (ROV) that will be used to visually assess the impact of changing ocean quality on the health of coral reefs in the area.

It is noteworthy to mention that this is the first deployment of the CAMEL outside of the United Kingdom and it is envisioned that the equipment will also be used in other Caribbean Countries in the future. This innovative technology has the potential to deliver dramatic cost savings in a wide range of maritime applications, including hydrographic surveys. CZMAI is also exploring the possibility of working with NOC to install autonomous monitoring infrastructure in strategic locations to characterize changes in marine conditions such as ocean acidification, nutrients, and oxygen levels that may lead to increased stresses on the coral reefs.

CZMAI would like to take this opportunity to thank the UK Government for the support afforded to Belize through this project and others via the Caribbean Marine Economies Programme as well as the agencies such as the Belize Port Authority and other Government Ministries and Departments including the Ministry of Finance and Customs and Excise Department for facilitating logistical arrangements.