Drones monitor lagoon seaweed

THE Ministry of Marine Resources (MMR) has begun using drone technology to monitor seaweed in Rarotonga's Muri lagoon.

Unmanned aerial vehicles (UAVs), or drones, are a relatively new tool for use in ecological research and monitoring, and are becoming more and more accessible and easy to use.

Drones are fast and effective, increasing opportunities for more regular monitoring and research and are valuable tools for collecting data.

MMR is using aerial surveys as part of the Mei Te Vai Ki Te Vai (MTVKTV) project to monitor the spatial distribution of the seaweed in Muri Lagoon over time.

MTVKTV was launched last year to address seaweed growth and improve the water quality of lagoons in Rarotonga and Aitutaki. Due to pressure from population density and tourism, Muri Lagoon is the first priority of the project as it investigates the causes and possible short and long-term solutions to address environmental degradation.

The Ministry of Marine Resources is carrying out investigations on the seaweed growth alongside other environmental investigations being conducted by the project team.

Senior marine ecologist Dr Lara Ainley says the drone can also be used to make observations beyond the scope of Muri lagoon and the MTVKTV project.

"Something that's come out of the MTVKTV activities is that the seaweed doesn't only occur in Muri. We want to use this technology as much as we can.

"Once we have taken drone images or footage, we then go out in the field and check what we are seeing in these aerial images. Each time we've been out, we've confirmed an abundance of seaweed in other locations around Rarotonga," she says.

Drones can also be used to record data for one-off impacts such as the recent stranding of the fishing vessel Zambucca off Muri.

"We used a drone to get a good idea of the extent of the impact that the vessel had on the reef in Muri."

Drones are also being used to monitor other important environmental changes such as coral bleaching and shoreline erosion, as well as to carry out 3D mapping.

Full-scale mapping of some of the smaller outer islands such as Takutea or Manuae is also possible with UAV technology.

"From that kind of imagery you can get a really good idea of the types of habitats that occur in these islands, whether there are specific areas where resources or animals are, such as trochus on a reef flat, or the extent of vegetation," says Dr Ainley.

Drone technology is likely to have other applications for the ministry in its work, she adds.

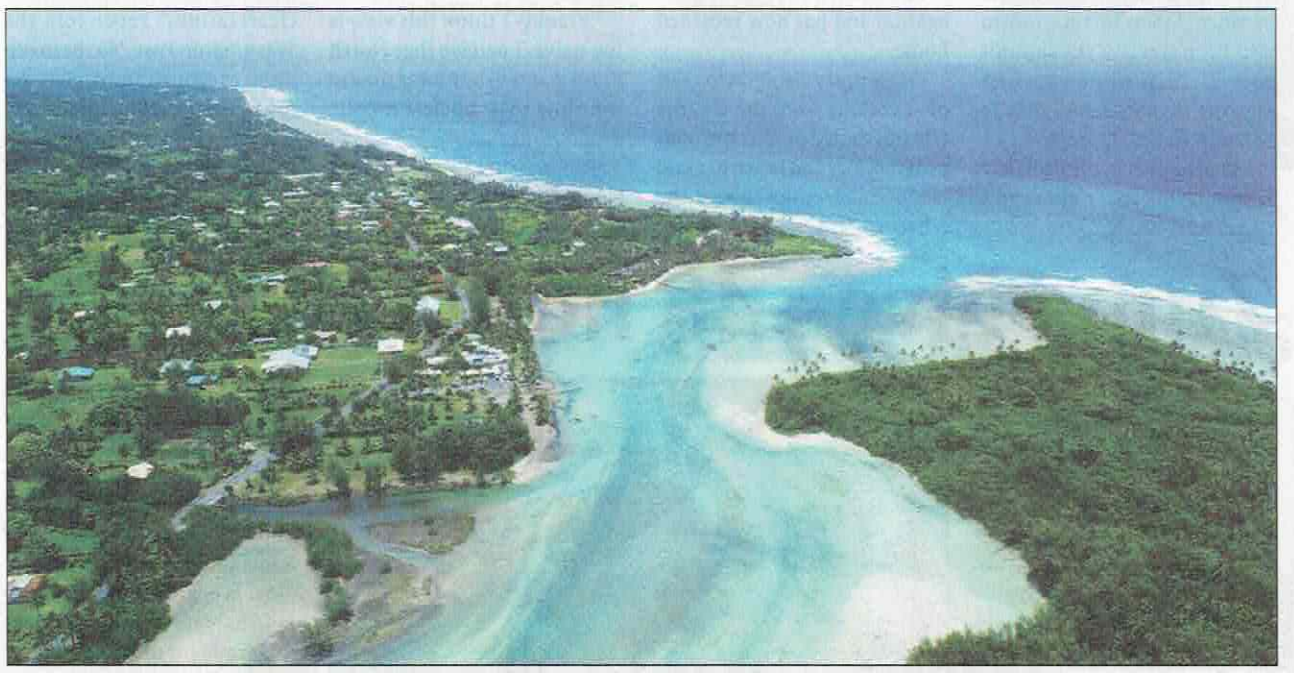
"The drone imagery has a high resolution and a high dynamic range that allows us to get a lot more detail out of the images compared to Google Earth or other satellite images."

The ministry will develop policies to ensure that its UAVs are manned by trained drone pilots and in strict accordance with operational procedures.

The community may see the MMR drone in use around the coastline from time to time as the ministry's science team continues to monitor seaweed growth.

■ MMR

Ministry of Marine Resources staff operate a drone. 18021211



An aerial shot of Muri lagoon which is known to have seaweed issues. Ministry of Marine Resources has started using drone technology to monitor the seaweed in Muri lagoon. 18021210