

# research

## In uncharted territory

Amanda Maness, UNCW graduate student, is mapping the Oculina coral reefs off the coast of Florida. Her research may play a key note in fisheries management in that area.

“We’re giving the management entities the scientific data to identify coverage of protected areas as well as cover uncharted parts of the protected area,” she said. Maness is one of the first to use the Eagle Ray, a one-ton, \$1.5 million autonomous underwater vehicle (AUV) unveiled in August by the National Oceanic Atmospheric Association’s Undersea Research Center at UNCW’s Center for Marine Science.

The crew prepares the Eagle Ray AUV for deployment.

Doing research for her master’s degree in marine science in 2005, Maness used the much smaller Phantom ROV (remotely operated vehicle) and a leased multibeam sonar to map and video 88.3 square kilometers of the protected seabed, offering the highest resolution bathymetric maps in the area to date.

With a computer application software developed by Dave Crist ’06, a computer science major, Amanda converted acoustic measurements obtained from the sonar into information that quantified the amount of coral on the reef and then used mapping software to display it as a 3-D image.

Maness also used about 15 hours of video of the area to further identify the “humps and bumps” where coral might be located. The data collected includes identification of smaller mounds located off the main reef, indicating that younger *Oculina varicosa* coral heads are being restored.

“The science is so new, there haven’t been that many papers published on this. It’s pretty cutting edge as far as ocean science goes,” said Maness.

Using the Eagle Ray, Maness should be able to get more accurate data, much more quickly.

“You can get more science done cheaper and faster and get the information for management,” she said. “I can show them where the features are, what to look for and protect.”

Oculina Banks, the largest habitat of the ivory tree coral, is one of the first deep-water coral reefs protected by the South Atlantic Fisheries Management Council. Over the years, it provided valuable habitat for grouper and snapper, but because of damage to the reefs caused by rock shrimp fishermen during the 1970s, ’80s and ’90s, the fish population has been declining. A 1,029-square-kilometer area is now closed to fishing.



Photo by Aaron Alexander