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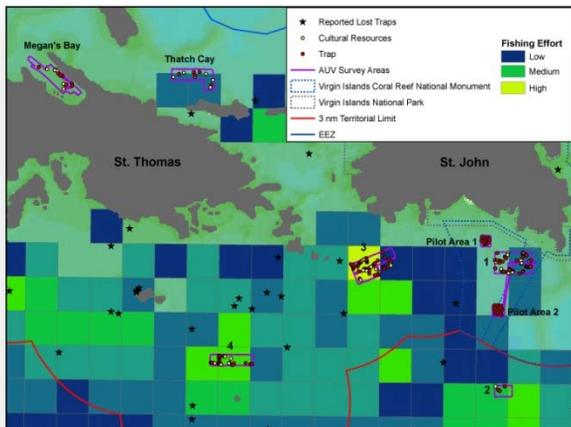
## Sea Floor Characterization of the U.S. Caribbean 2011 Field Season Day 2: March 29, 2011

### Searching For Derelict Fish Traps

Today work took place in an area south of St. Thomas, near a rocky promontory called French Cap Cay. The waters around French Cap Cay are popular with the local fishing community who often use traps to catch resident reef fish and lobsters. The day's goal was to deploy the ROV to verify the results of a pilot study undertaken last fall to determine how capable autonomous underwater vehicles (AUVs) were at detecting derelict fish and lobster traps. Read more about this collaborative project between NOAA, the U.S. Navy, the National Park Service, the St. Thomas Fishermen's Association and other partners [here](#).



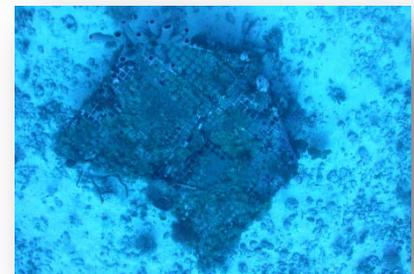
French Cap Cay



A map of fishing effort and fish traps around St. Thomas and St. John (left). The blue squares represent low fishing effort and the yellow squares indicate high effort. AUVs (top right) were used to locate and identify derelict fish traps (bottom right) during a pilot study conducted in October 2010.

Over the course of eight hours, the ROV was deployed at several different locations where traps were identified five months earlier by a sidescan sonar unit mounted to the AUV. Surprisingly, only a few derelict traps remained where they were first detected by the AUV last fall. Most were simply gone.

"It's possible some of the traps we detected in October were live traps, not derelict," Tim Battista, mapping mission and AUV pilot study lead, explained. "The ones we did see today were right where the AUVs indicated." Using the ROV to validate the AUV data is critical because the pilot study was the first time AUVs had been used for such a mission. Normally AUVs are used by naval offices around the world to search for underwater munitions.



A derelict, chevron-shaped fish trap first found by the AUV. Its location was verified using the ROV.

## Lionfish Encounter

As the scientists were going through the still photos collected throughout the day, they noticed something that got nearly everyone in the lab out of their seats. When zooming in to see if there were any fish in the trap, the distinct striated spines of a lionfish became visible. Lionfish are an invasive species in the Atlantic and Caribbean. With no natural predators here, these voracious eaters can quickly consume native species who have little defense against this new threat.

[Click here](#) to learn more about the lionfish issue and what NCCOS is doing to better understand and mitigate the threat.

## A Look Ahead to Tomorrow

Tomorrow we will work south of St. John. And the results of the AUV pilot study will go through another round of verification as Ken Wild, a marine archeologist with the National Park Service in St. John, joins the mission for a day. In addition to hunting derelict fish traps, the AUVs were also used to search for possible marine archaeological artifacts during the pilot study. Battista and Wild will use the ROV to examine potential historical objects in addition to any traps on the sea floor.



Can you spot the lionfish? It's hard to see at first, but if you look closely the striped spines are visible.

## Modifying Equipment in the Field

Working under such a variety of conditions means equipment must often be modified to meet evolving data collection needs. This was the case with the ROV as dusk approached on day two. Originally the two-man ROV team from the University of North Carolina, Wilmington mounted the still camera system to collect derelict fish trap photos from a downward angle. The research team then decided that having a greater range of movement was a better idea. Lead ROV operator Lance Horn and his technician Glenn Taylor quickly unpacked several tools and got to work moving the ROV camera system and strobe. Within an hour, the team mounted the camera to a forward facing tilt bar that the can be easily moved up and down from the control station. All in a day's work!