**1 barrel\_hires**

Giant barrel sponges (Xestospongia muta) are common in the upper mesophotic zone at San Antonio Bank.

**2 chart\_hires**

Map of the survey sites (yellow pins). Broad orange arrows indicate the offshore Yucatan Current, while the red arrows indicate the shelf break countercurrents.

**3 collection\_hires**

The ROV sample collection skid, including the manipulator, is the key to successful specimen sampling during our mission. Samples can vary widely in their structural integrity. Some pop off the underlying substrate as entirely intact individuals while others, like this yellow Halichondridae sponge, easily tear to allow us to collect one portion of the sponge while leaving the rest to heal and regenerate.

**4 MOVIE cuba\_leg1\_summary\_1280x720**

Video highlights from Leg 1 dives using the Mohawk ROV.

**5 fig7\_lionfish\_hires**

Lionfish, an exotic species, was present at most sites we explored, but in much lower densities than in the U.S. mesophotic reefs.

**6 green\_alga\_hires**

The green alga Penicillus dumetosus is an important calcifier and producer of fine sediments. Previously reported to have a very shallow depth range in Cuba, we found this species to depths of 53 meters.

**7 group\_hires**

Group photo of Leg 2 scientific party poses with the SubAtlantic Mohawk 18 remotely operated vehicle (ROV), owned by the National Marine Sanctuary Foundation and the Flower Garden Banks and operated by the Undersea Vehicles Program at the University of North Carolina Wilmington (UVP/UNCW).

**8 pressure\_hires**

The moment we go into collection mode, the person operating the manipulator is instantly aware that the entire crew (11 other scientists and 6 crew) are all waiting on them to accomplish their task successfully … NO PRESSURE!

**9 samples\_hires**

Dr. Voss and Cuban counterpart Juliett González Méndez are clearly very pleased with two of the samples collected during an ROV dive southeast of Cienfuegos: a branching Madracis coral and an orange Verongida sponge.

**10 shallow\_hires**

Shallow water coral sampling via snorkeling was conducted at three sites along the northern coast. With patience, determination, and a bit of helpful coaching, ROV pilot Jason White mastered the art of collecting coral biopsies.

**11 silverton\_hires**

Silvertown Bank, a plateau similar to San Antonio Bank that we visited in Leg 1, had a high diversity and abundance of fishes in the upper mesophotic zone than at other sites we visited along the southern coast of Cuba.

**12 sloped\_hires**

Steeply sloped or even completely vertical walls were common from 75 meters-125 meters at roughly half the sites along the north eastern reefs of Cuba. Here thousands of black whip corals (Stichopathes sp.) and whip gorgonians (Elisella sp.) extend into the current, feeding on the plankton pushed along these walls by deep currents.

**14 studivan\_hires**

PhD Candidate Michael Studivan, FAU Harbor Branch, using the ROV toolsled controls to collect corals, sponges, algae, and carbonate rocks for taxonomic identification and genetic research into connectivity across mesophotic coral reefs in Cuba and the U.S.

**15 sunrise\_hires**

Sunrise, as we arrive off of Havana on the last day of the expedition.

**16 swiftia\_hires (1)**

Some samples such as this Swiftia exserta collected at 70 meters are too big to fit in the bioboxes or suction buckets, and have to be carried up to the surface in the manipulator jaws. Hold on tight!

**18 swiftia\_hires (2)**

We saw the gorgonian Swiftia exerta along the walls on several dives, sometimes with balled-up basket stars living on them.

**19 team\_hires**

Group photo of Leg 1 scientific party.

**20 arriving\_hires**

*The*R/V Walton Smith*arriving in the port of Havana, 8 a.m., May 16,**2017.*Image courtesy of Centro Nacional de Áreas Protegidas, Cuba’s Twilight Zone Reefs and Their Regional Connectivity.

**21 plate\_coral\_hires**

Huge (around 1-meter wide) and healthy plate corals are present to depths of 75 meters at San Antonio Bank.

**22 lobster\_hires**

A spiny lobster (Panulirus argus) comes to inspect the ROV during a coral collection in the upper mesophotic zone on the top of the reef wall at 45 meters depth.

**23 jacks\_hires**

In our ROV transects along the upper reef walls, we often see large schools of Jacks, such as Horse-eye Jacks (Caranx latus).

**24 grouper\_hires**

The Tiger Grouper (Mycteroperca tigris) is one of several groupers we have seen on Cuba’s mesophotic reefs.