MAHS Survey and Field School 2017

Key Largo and Pickles Reef in the FKNMS

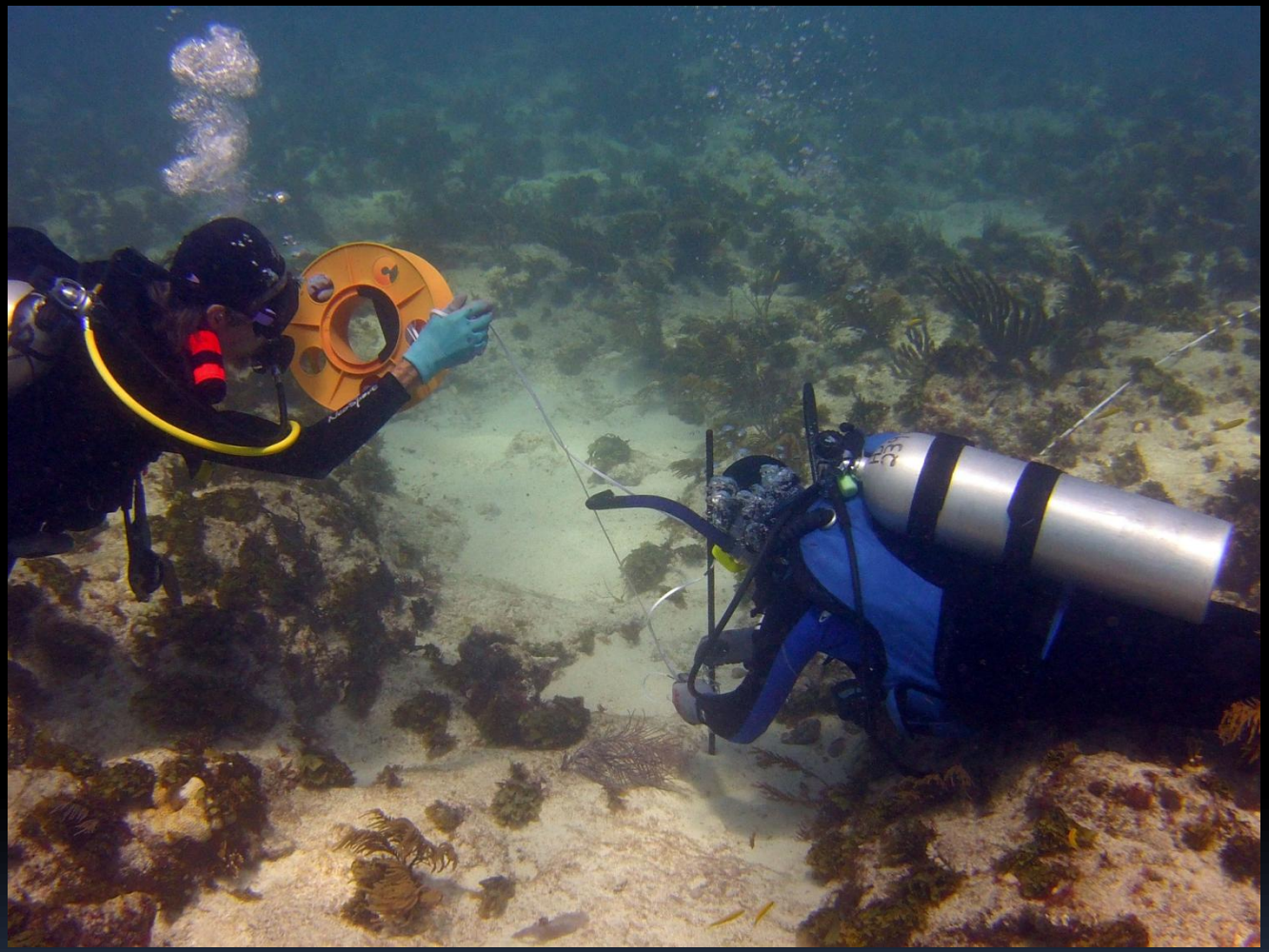
For the 2017 MAHS Field School we returned to Pickles Reef, which lies about 6 miles off shore from Key Largo in the Florida Keys National Marine Sanctuary.

In past years we've been studying the Pickles Reef Barrel Wreck. This year we worked nearby, researching a locale known as the Gear Wreck.

As always, we begin the field school with a dry-land walkthrough of the trilateration mapping technique used in the class.

Then it’s out to the reef and into the water.

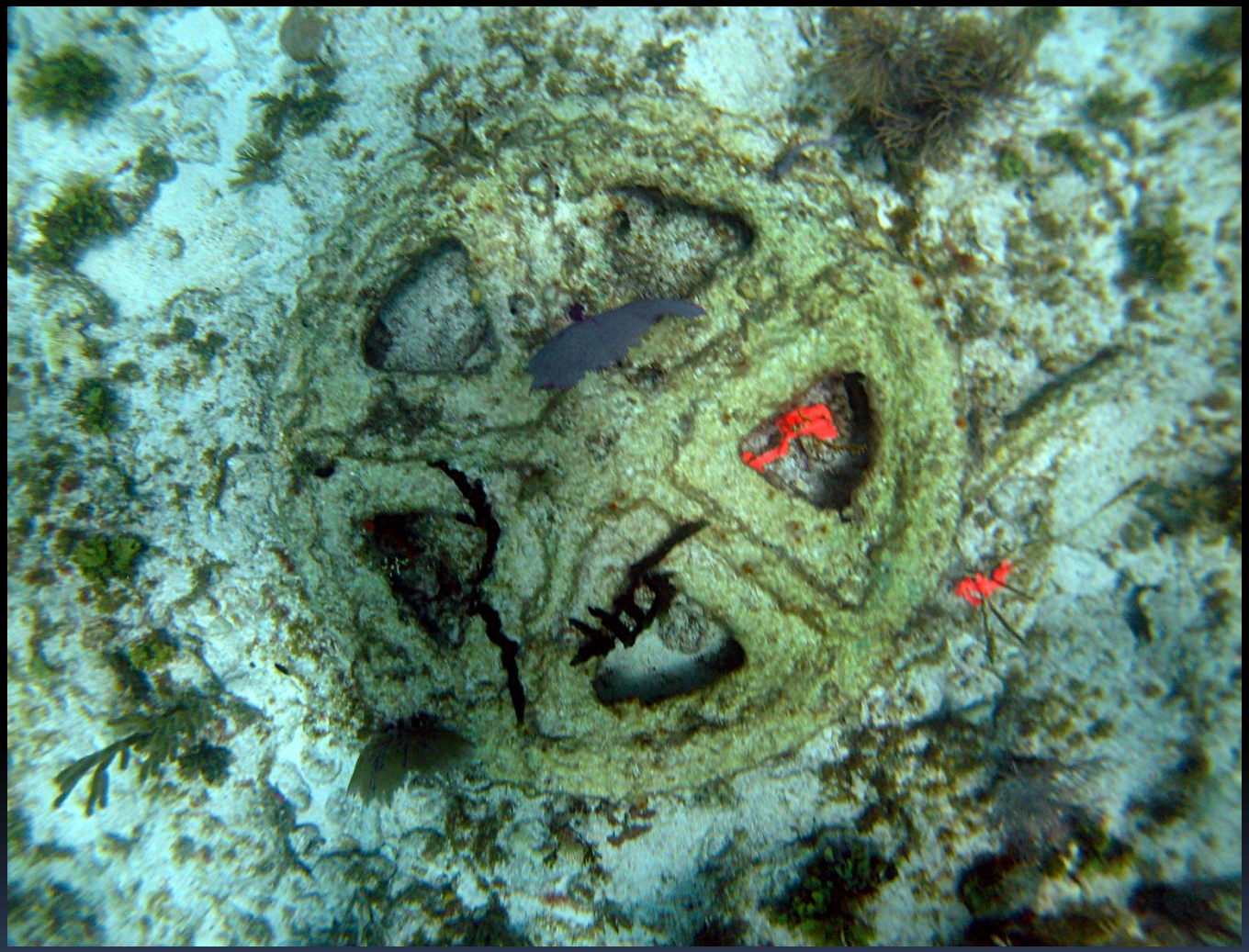
This is the famous gear that has given the Gear Wreck site its name. With co-ordinates provided by FKNMS, the dive boat captain put us right over the feature.



First things first, though. We did a reconnaissance survey to assess all the features at the site and determine their general distribution. Using that information we set a baseline down the center of the site. All subsequent work was referenced to this baseline.

The site is situated on a ridge of old, rocky coral with sandy areas on either side. It is a common formation on the reef known as spur and groove. Examples are clearly visible in this satellite image near Pickles Reef.

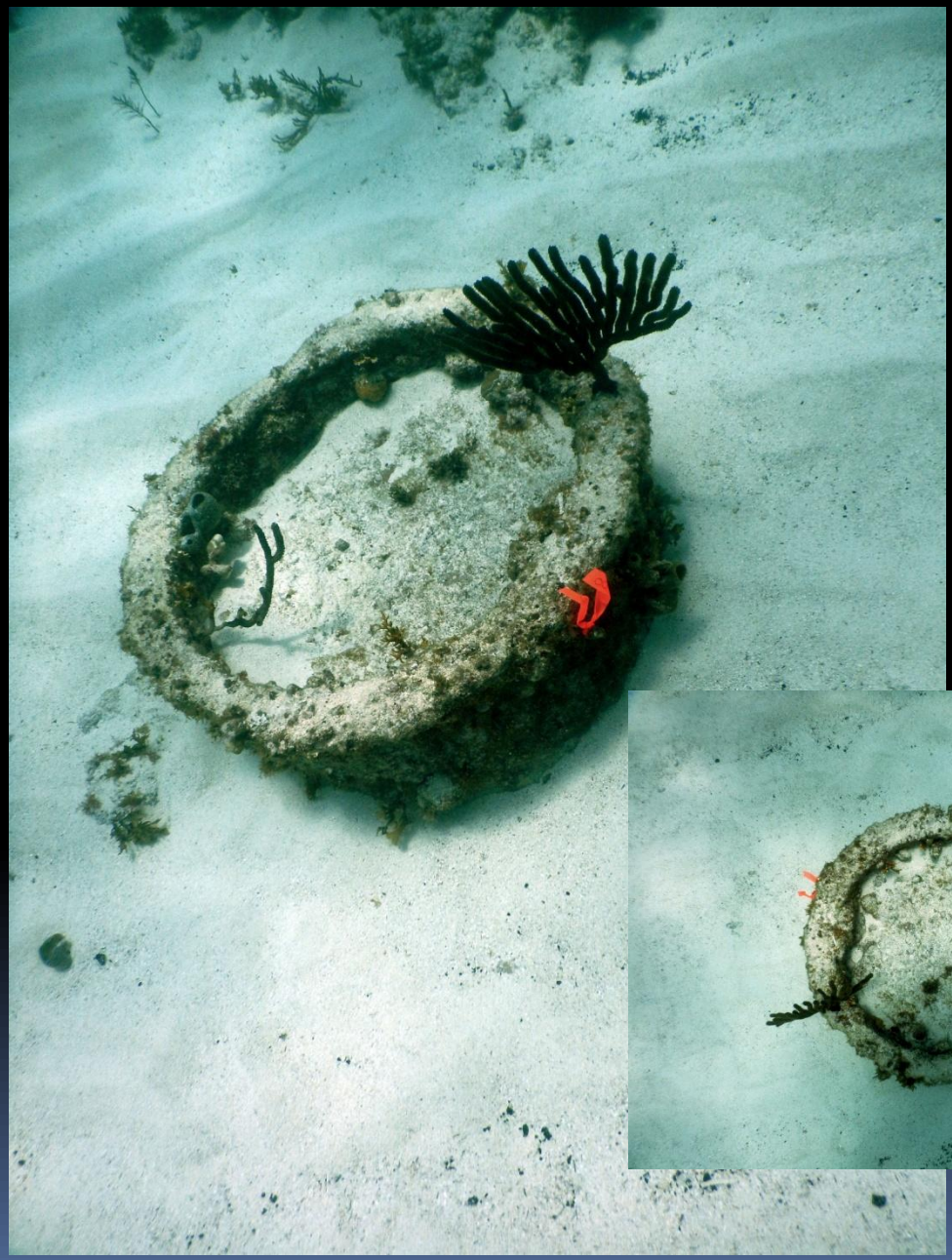
Metal features, consisting of a mix of pipes, bars, heavy cable and wire rope, etc., are widely spread across the surface of the rocky spur and down its sides into the adjoining sand grooves.



Back to the gear. It is actually more like a heavy, spoked wheel, maybe a pulley of some kind.

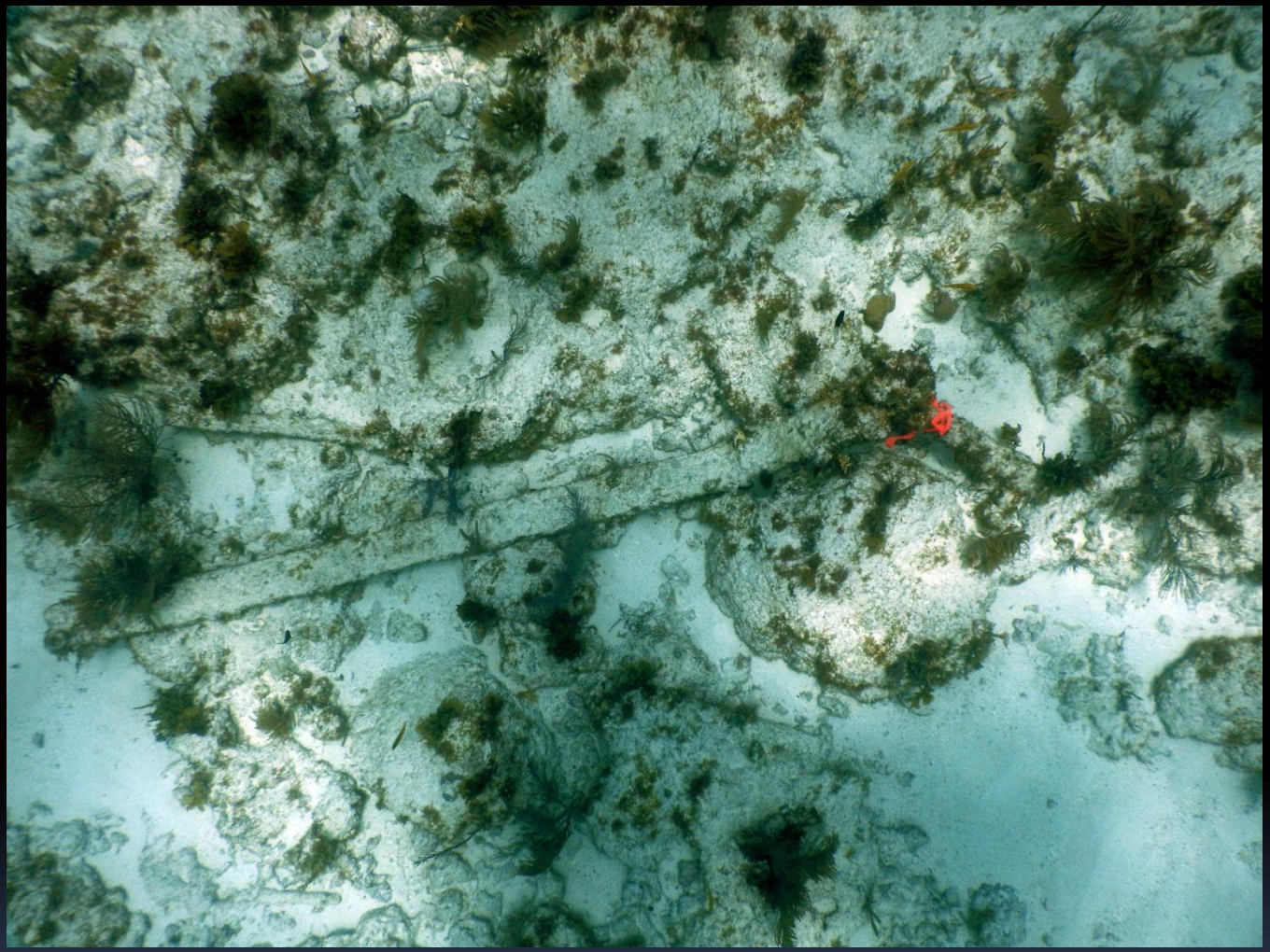
The rim is channeled to receive a belt or something similar.

The feature measures about 1.3 m in diameter and is a little over 10 cm thick.



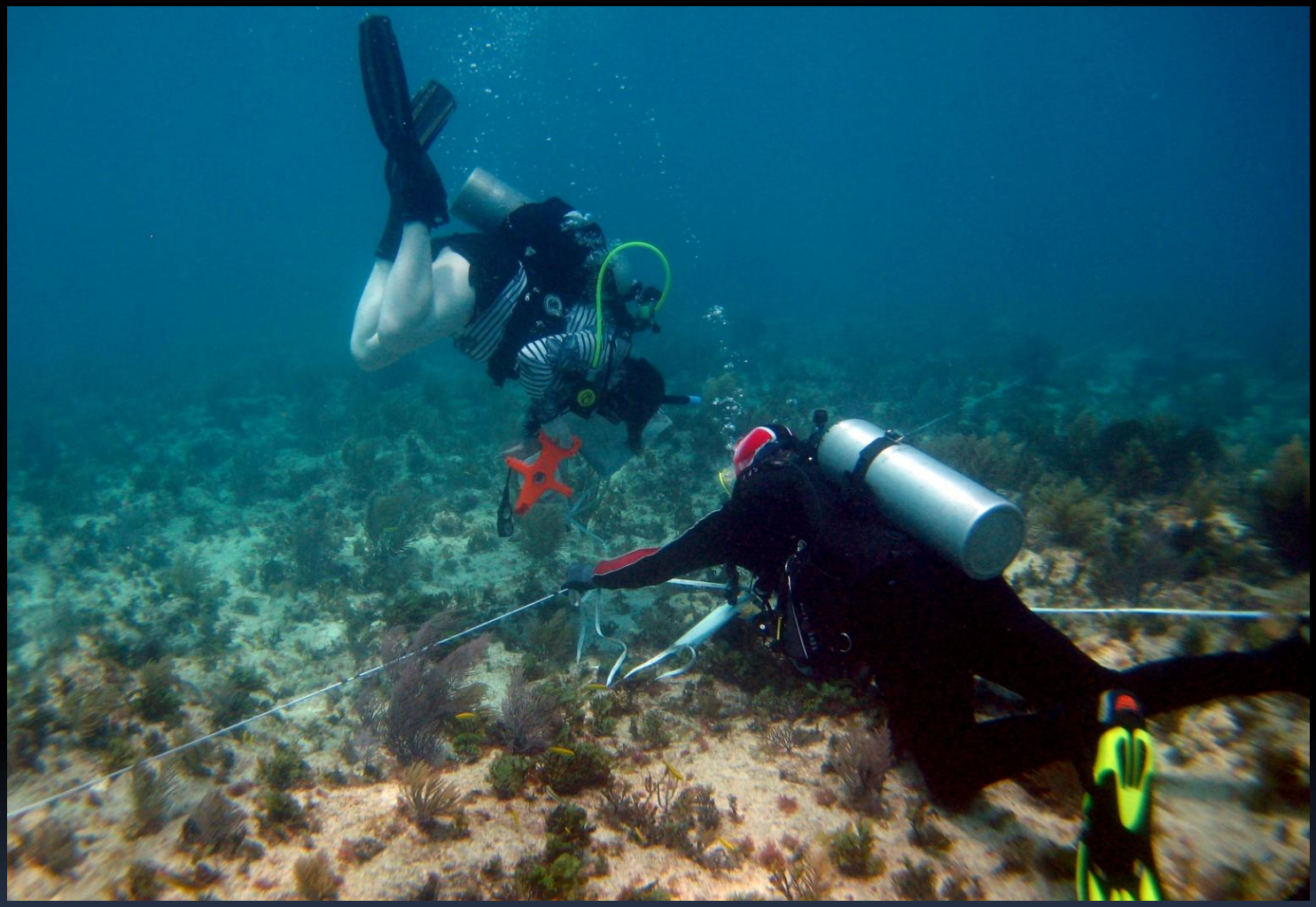
Among the other distinctive features at the site is a large metal cylinder, that sits in the sand groove on one side of the spur.

It is round, as the overhead shot in the inset shows. Like the gear feature, it is about a meter in diameter.

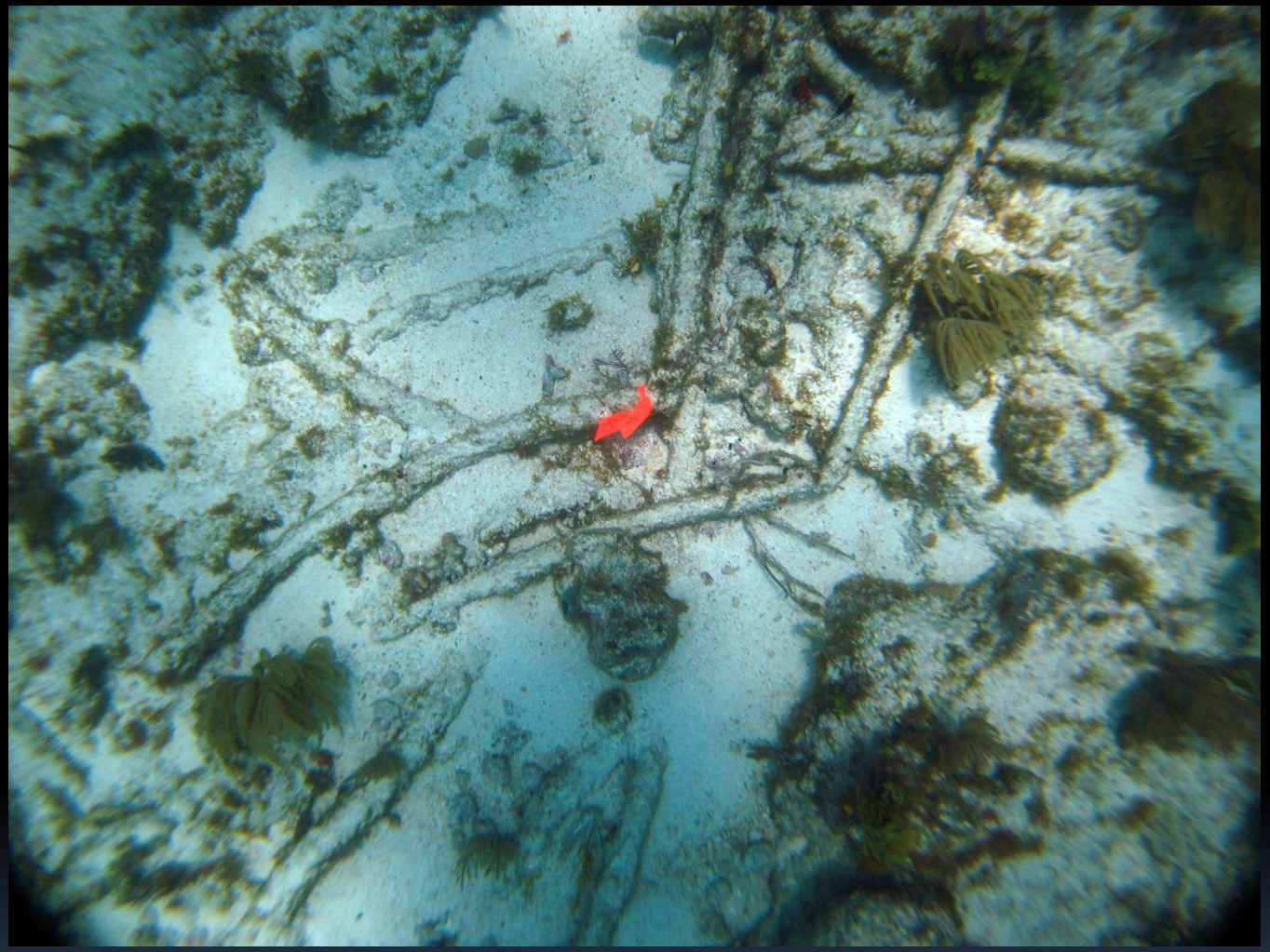


A long metal bar with a round pin through one end (where the flagging tape can be seen in the photo) is located nearby.

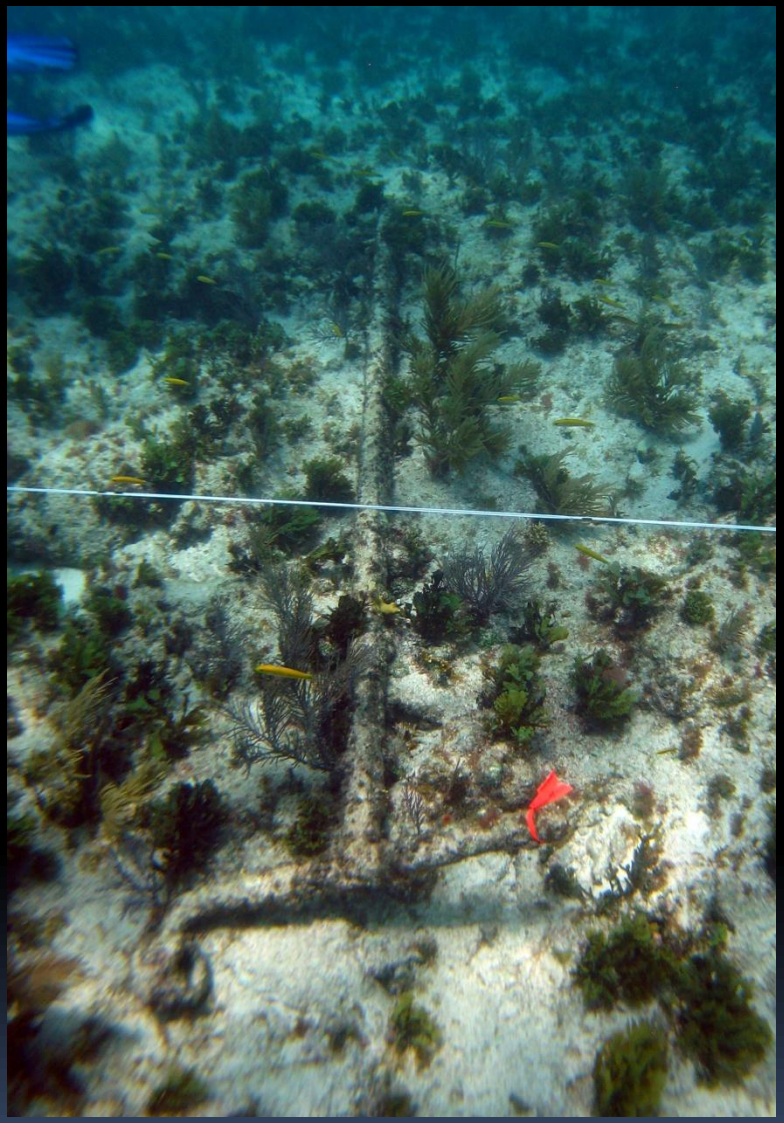
The site is shallow, less than 15 feet deep. The water was choppy at the surface and there was some substantial surge on the bottom, but divers were able to record a good amount of trilateration data.



Still, getting the measurements was a little challenging at times.



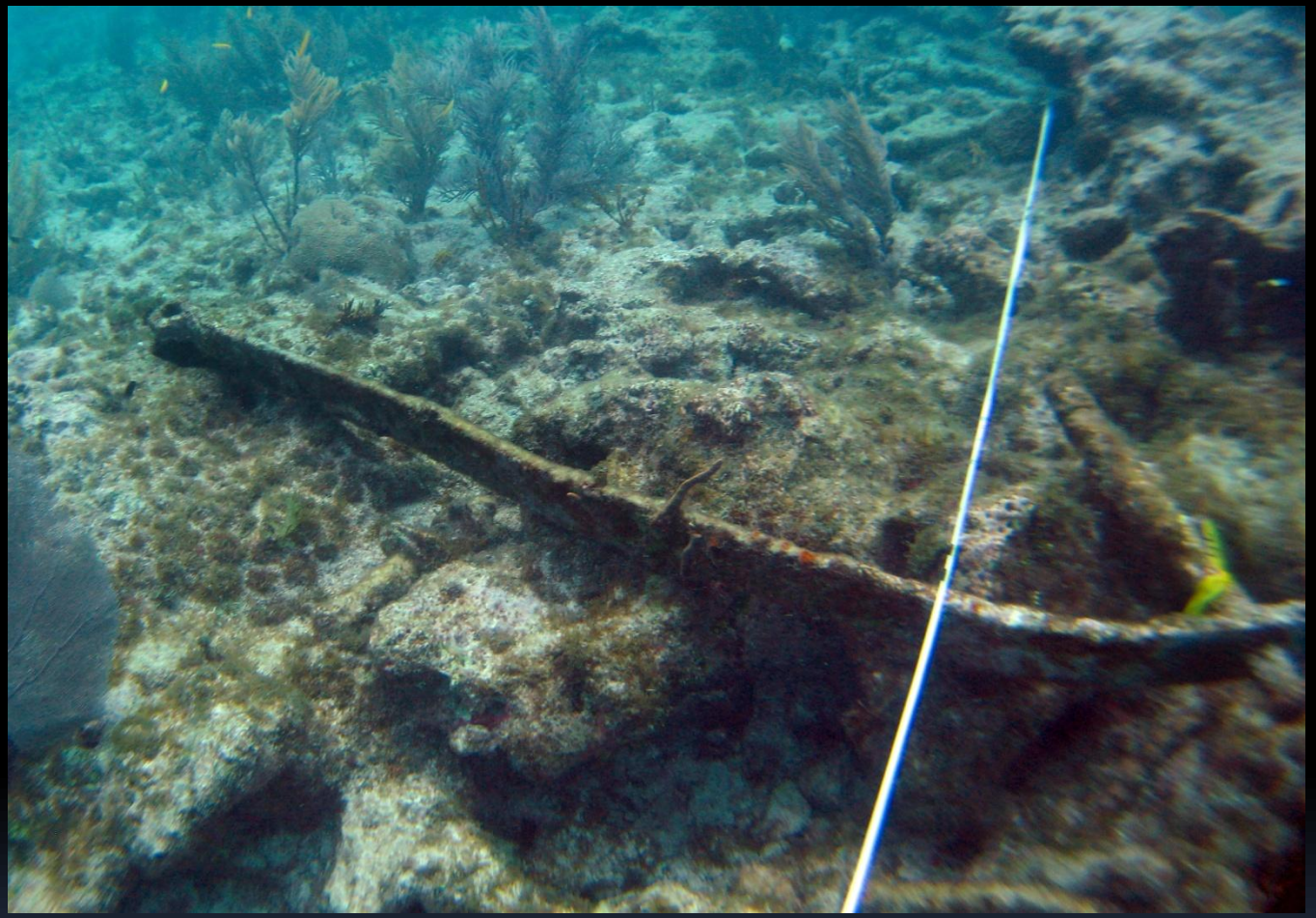
This is typical of the various clusters of metal pipe seen in parts of the site.



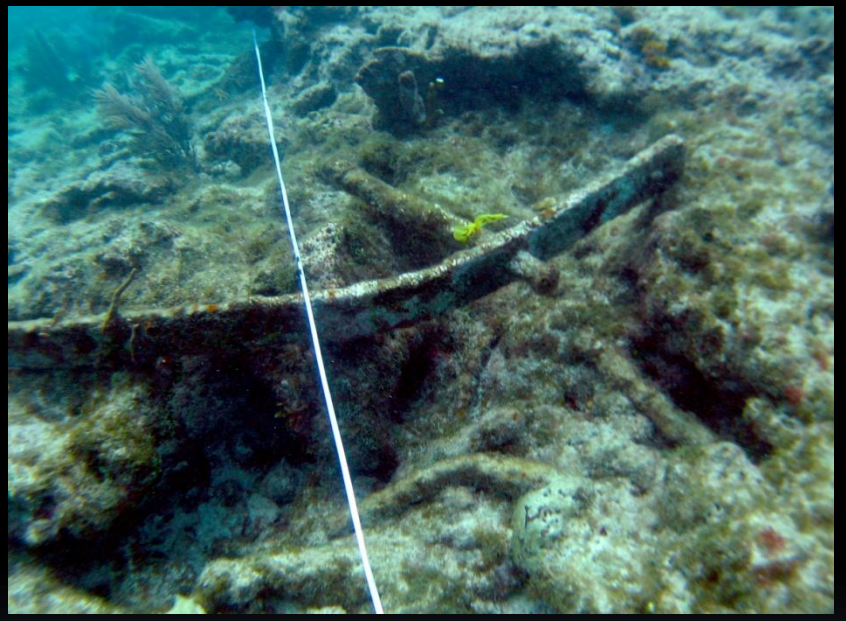
Another feature is a long rod with a cross piece at one end.

The cross piece bends 90 degrees and finishes in a large eye, in the lower left of the photo.

Here divers are making detailed measurements of the feature.



Another feature is a thick metal band with a gudgeon-like eye at one end and a pin through the opposite end.

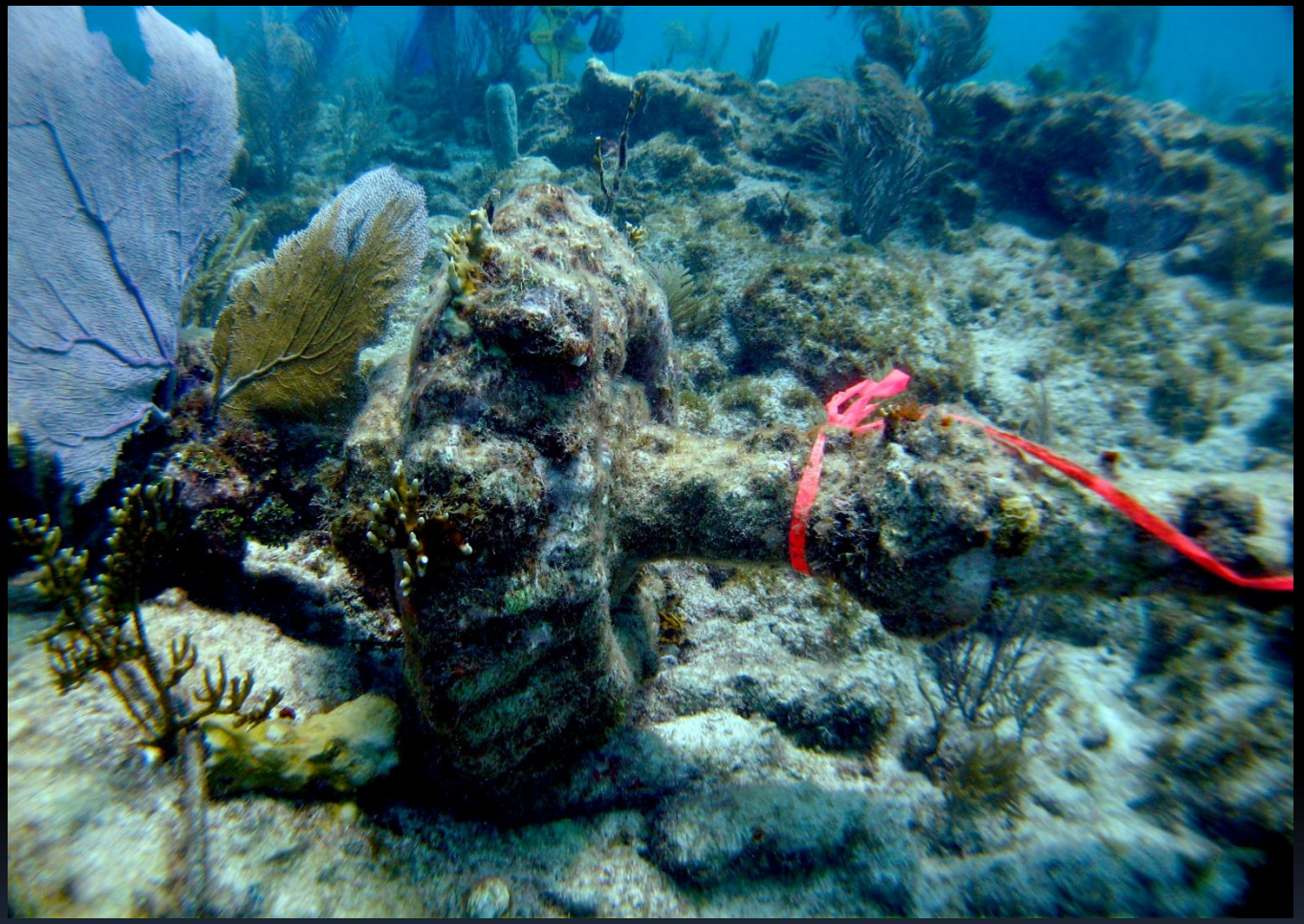


Detailed images show the eye, on the left, and the pin, on the right.

A large axle with several gears lies on one edge of the reef spur. Yes, there are gears on the Gear Wreck site.

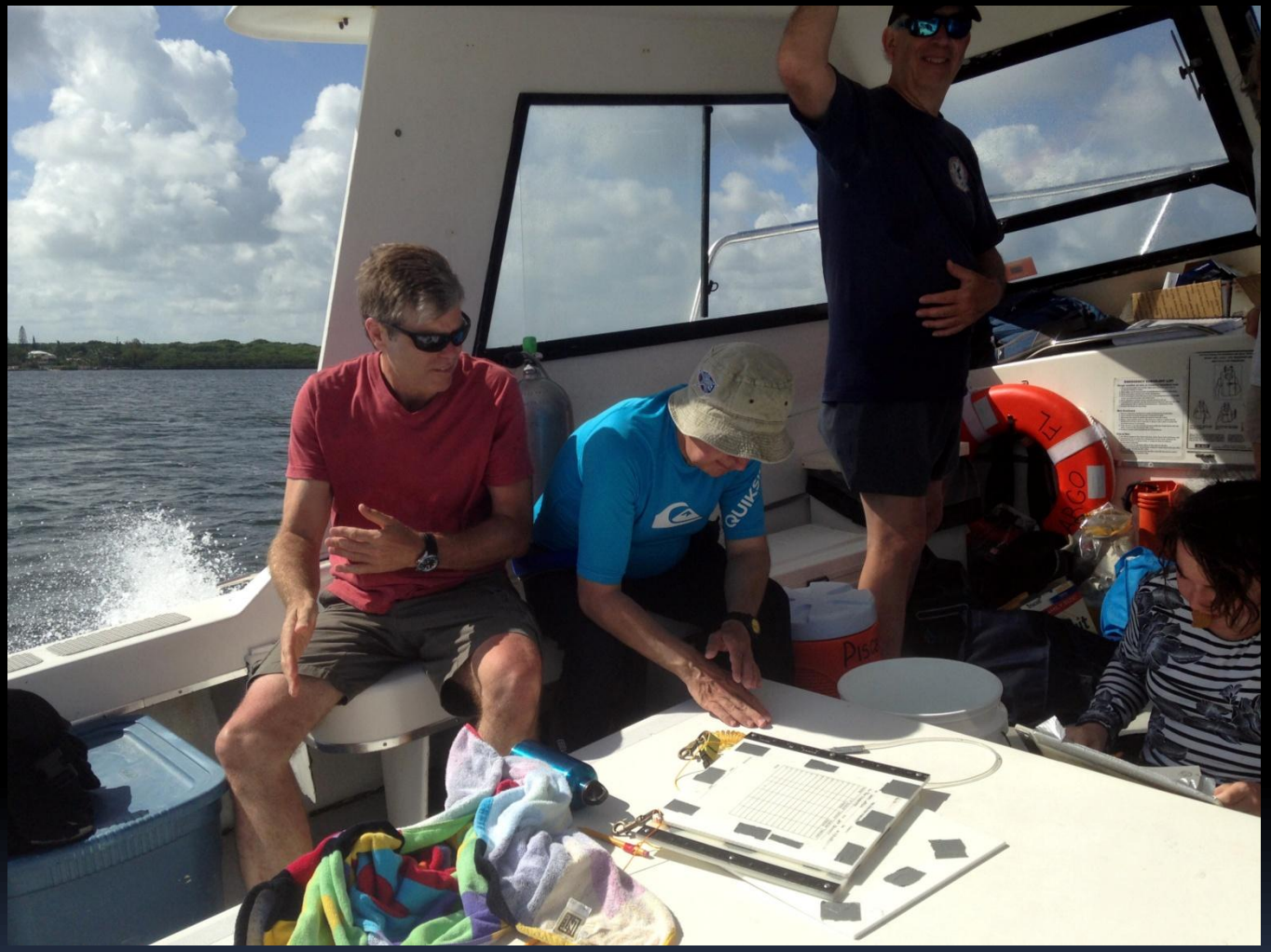
Here’s a diver over the feature for scale.

We don’t yet know what the assembly was from, but it was part of a complex mechanism.



Near the center is a large, beveled gear that would have meshed with a similar gear to transfer the motion of the axle 90 degrees.

At one end is a hub with slots for a large gear in the same plane as the axle.



Coming back after a long but successful day with plenty of data on our dive slates.

Drafting trilateration data at the end of the day.

Field school students and MAHS volunteers at the end of the project.

And thanks to Captain Bruce.

The organizations involved in the project this season included:

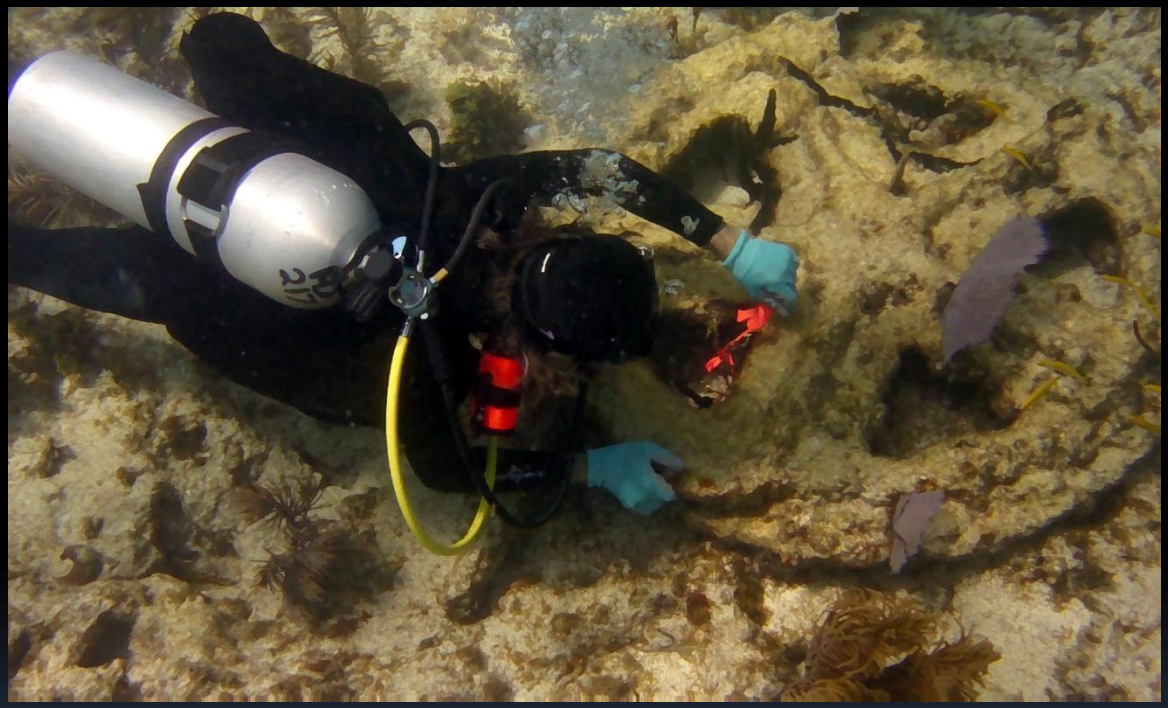
MAHS – Maritime Archaeological and Historical Society, Washington, D.C.

NOAA / Florida Keys National Marine Sanctuary

Florida Bureau of Archaeological Research

HORIZON DIVERS

**And special thanks again to Brenda Altmeier (Florida Keys NMS)
and Matthew Lawrence (Stellwagen Bank NMS)
for their continued support.**



**Jim Smailes, Jeff Quandt, Steven Anthony and Dennis Knepper
contributed photos for this presentation.**