An underwater photograph of a reef. The scene is dominated by large, light-colored rocks covered in coral and other marine life. The water is clear and blue. A text box is overlaid on the top half of the image.

**MAHS Survey of Unidentified Shipwreck  
Remains on Pickles Reef within the Florida  
Keys National Marine Sanctuary**

**Conducted under Permit FKNMS -2009-054-A1**





MAHS was issued a revised permit by the Florida Keys National Marine Sanctuary on June 15, 2010, to survey unidentified shipwreck remains on Pickles Reef within the Marine Sanctuary.

The project had two goals:

- 1) Conduct a preliminary reconnaissance survey of ship wreckage located on Pickles Reef ,
- 2) Conduct the annual MAHS Field School in Underwater Archaeology for the purpose of training sport divers in the techniques of non-intrusive archaeological mapping and documentation, providing the participants with valuable experience in maritime historical resource stewardship.



We planned to accomplish both goals at Pickles Reef, but weather and sea conditions altered the plans somewhat.

On our arrival in Key Largo, we dropped by Quiescence Diving Services to verify that the boats we'd chartered were ready for the next day.

Rob Bleser and his staff there told us that the weather was not co-operating.

But we didn't expect this – these flags were flying over the restaurant at which we ate the first evening.

In the event, there was no hurricane warning. But the winds did end up being a problem, with small craft warnings up every day.



The seas were high and choppy, which made for a rough ride out.



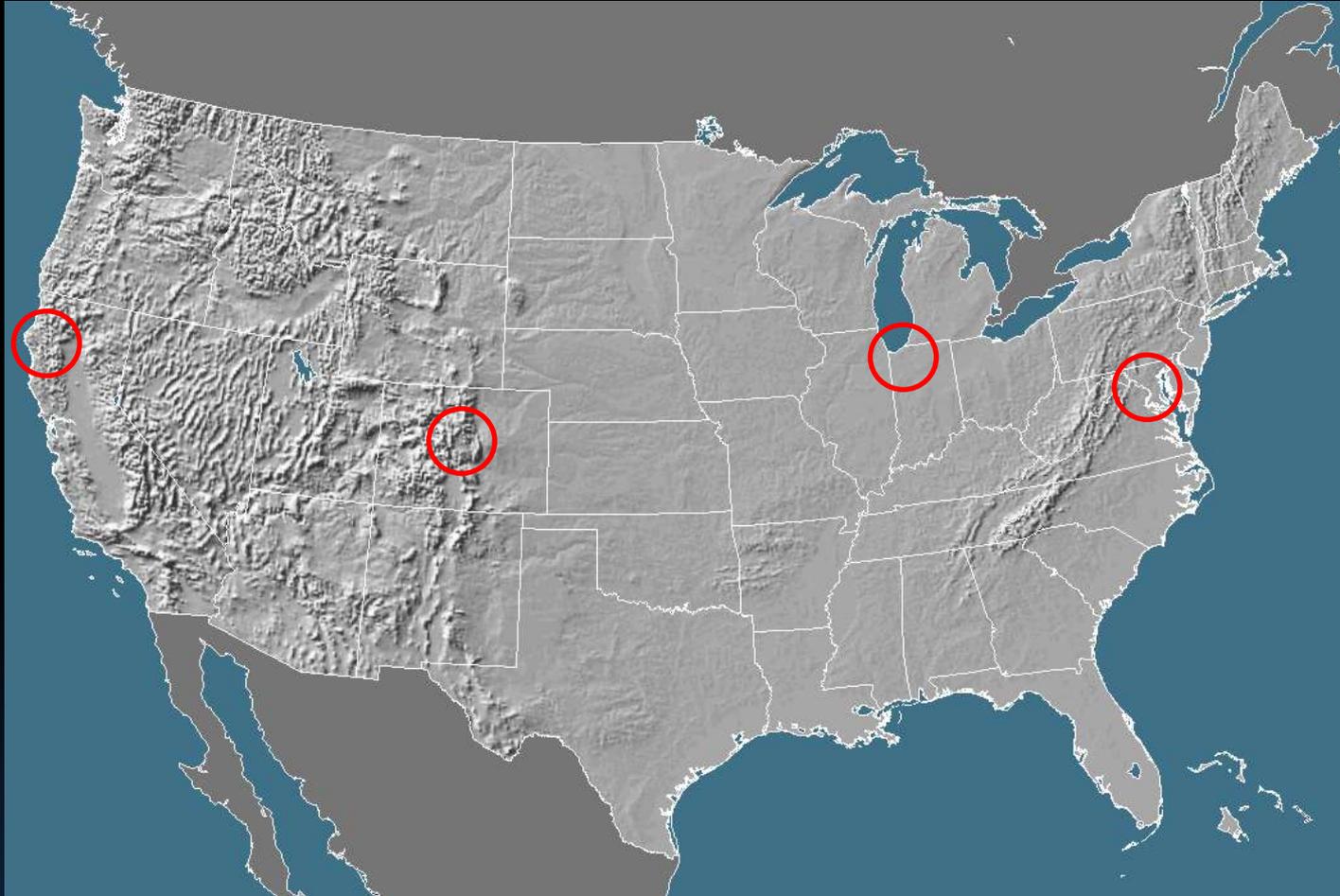
It also made getting in and out of the boats a little tricky and made more than one diver rather green around the gills.

Pickles Reef, where we planned to work, is shallow. The waves generated a pronounced surge on the bottom, making training impractical at that location.



So, the original plan to have everyone working in one location was altered. Instead of Pickles Reef, we took the field school to the wreck seen above, the *Charles W. Baird*, also known as Captain Tom's Wreck.

Lying in from the edge of the reef, the water here was much calmer.



This year the field school classes included divers who came literally from coast to coast:  
California, Colorado, Indiana, and Virginia.



As is our usual custom, we began the field school with a walk through of baseline trilateration, the main mapping technique that we teach.

We practice mapping on dry land first, to be sure that everyone understands the procedure and has a chance to try it out while they can still talk about it.

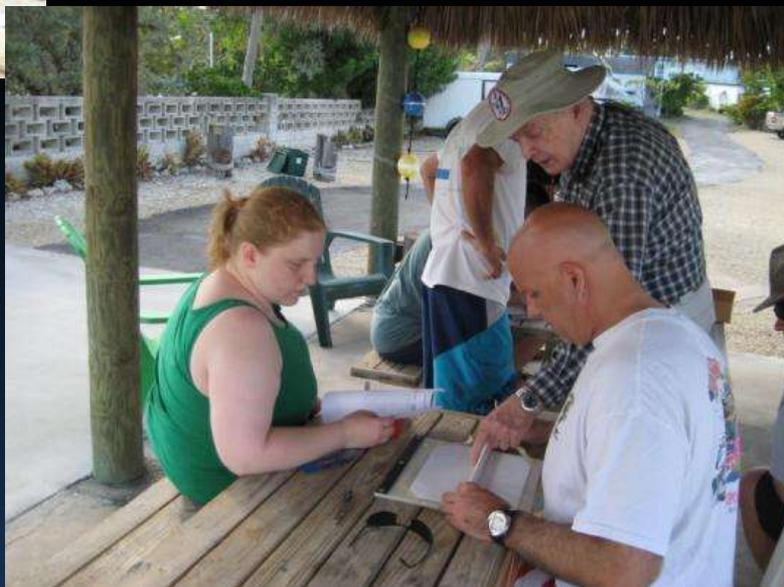
Underwater, of course, the talking part doesn't work.





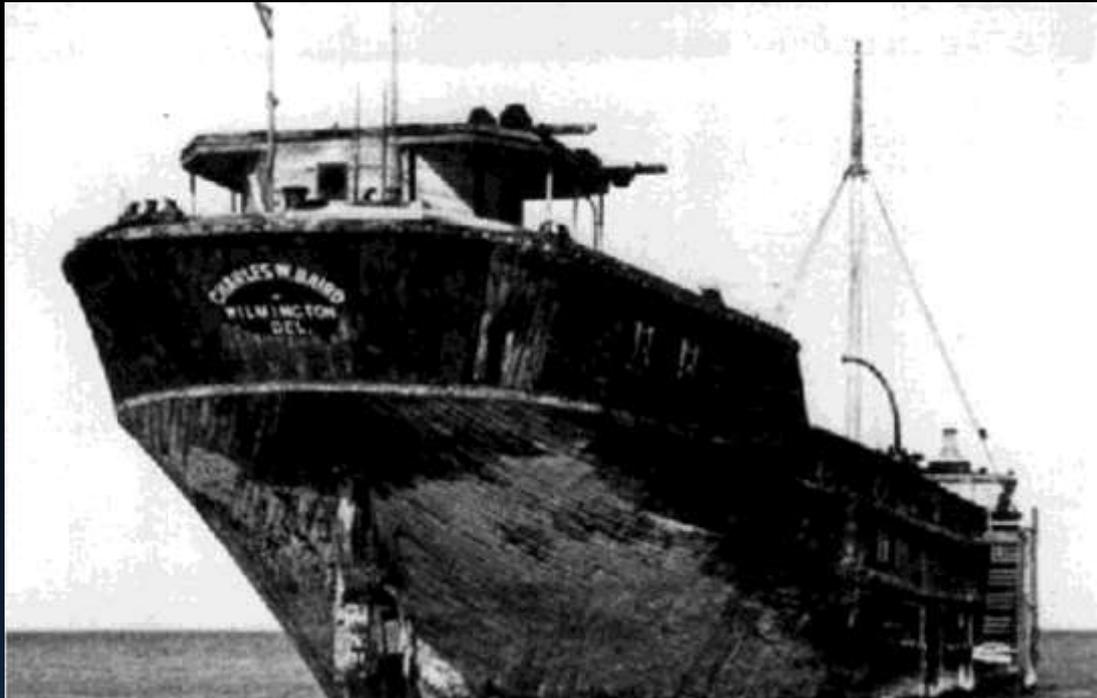
It is important to plot the data right away to see how the numbers fit together.

And it's all done under the watchful eye of the MAHS Education Director, Tom Berkey (in the checked shirt on the right).



On to the *Charles W. Baird*. It was a schooner barge that reportedly sank in the 1940s. A schooner barge was a cargo ship that had been converted for use as a barge. It had what was called a reduced schooner-rig (meaning that the masts had been truncated), the idea being that the ship could still be sailed short distances on its own if necessary.

As the story goes, one of the *Baird's* crew lit a fire on the wooden deck. Not only did the wood in the fire burn, so did the deck, and the vessel burned to the waterline and sank.



Note: the image above is from the Historical Museum of Southern Florida (Miami), <http://www.wreckwriter.com/baird.html>



Here are several views of the wreck. Lots of the hull remained, including frames and hull strakes. The vessel had settled upright on the bottom, and since it hadn't wrecked on the reef in a storm, it was not broken up too badly and did not have much of an associated debris field.



There were a few features lying around in the sand, though. To the left are a couple of views of the end of one of the frames that had broken off.

Below is another broken frame.



And to the left is what looks like a knee.



Above, one of the students is recording data at the site.

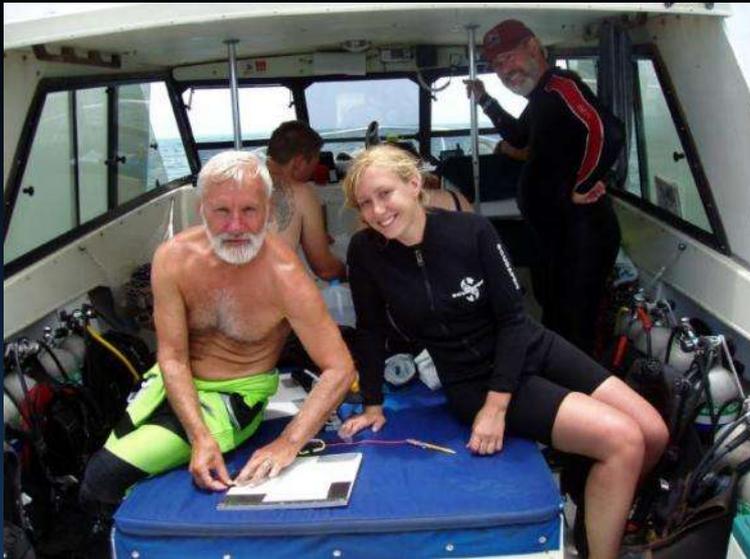
To the left, another diver is carrying the post driver that we used to drive the baseline rebar into the bottom sediments, a procedure allowed in the FKNMS permit.



As noted, the wreck is very shallow...

...in fact, part of it breaks the surface at one point.





Here are some of the divers from the field school.



Conditions at Pickles Reef were quite different. It was very windy and rough.



We conducted snorkel surveys and soon found the wreck site known locally as the Gear Wreck or Barrel Wreck. It was near one of the mooring buoys on the south edge of the reef.



So, we donned SCUBA and went diving for a closer look.





There was lots of metal debris present at the site, including beams and metal hull plating.



Most of the debris was relatively flat, and we saw no evidence of a keel, so our current theory is that this may have been a barge rather than a ship.





Maybe the most interesting aspect of the wreck is something the reef is known for -- barrels of cement.

The cement appears to have been packed in wooden casks. When the vessel went down, the cement got wet and did what wet cement does – it hardened.



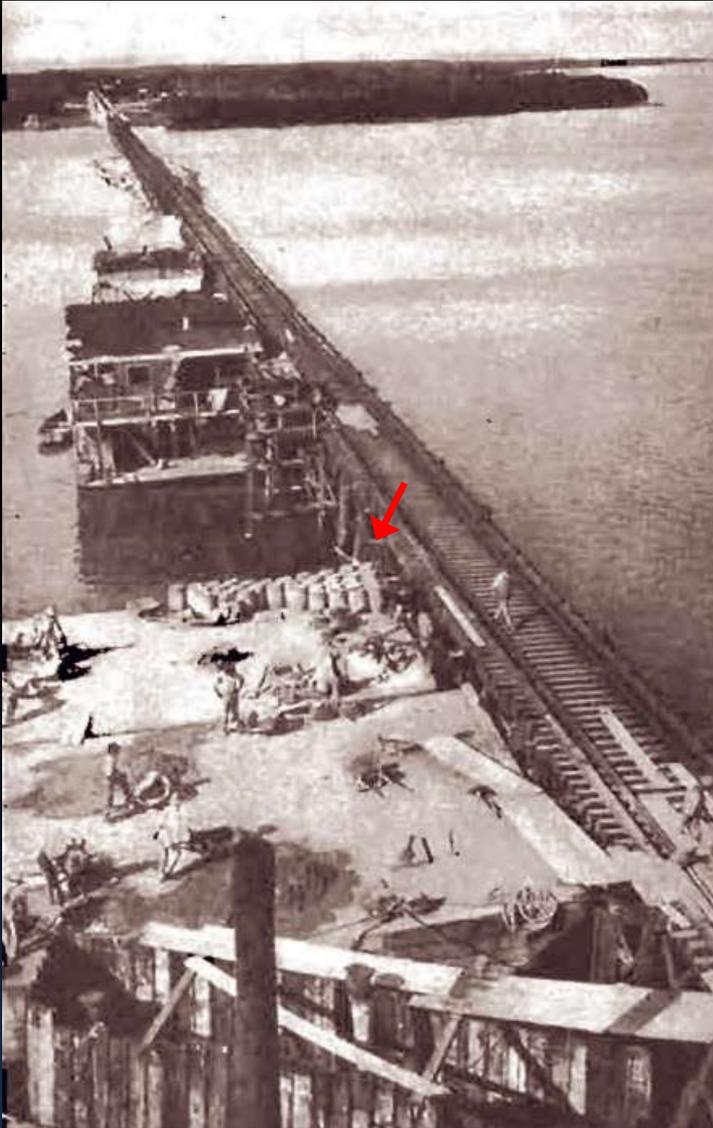
The wooden casks eventually deteriorated and disappeared, but the imprints of the staves are still visible on some of the barrels.





One theory at the moment is that the cement was destined for Henry Flagler's so-called Overseas Railroad, built from Miami to Key West after the turn of the 20<sup>th</sup> century.

This is an image of the railroad under construction. Note the barrels near the center.



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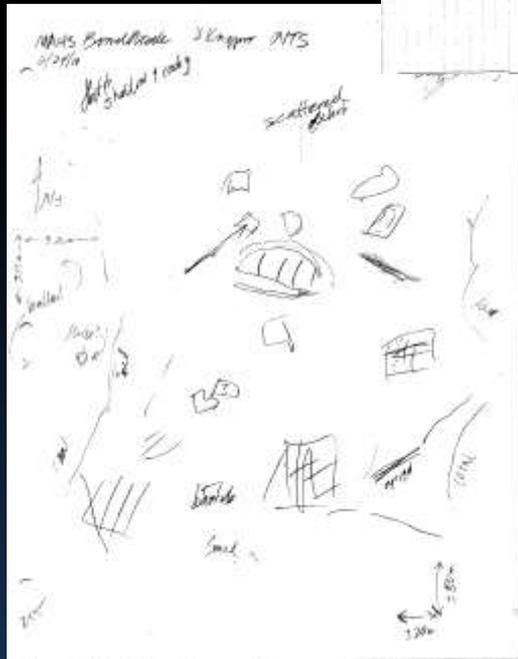
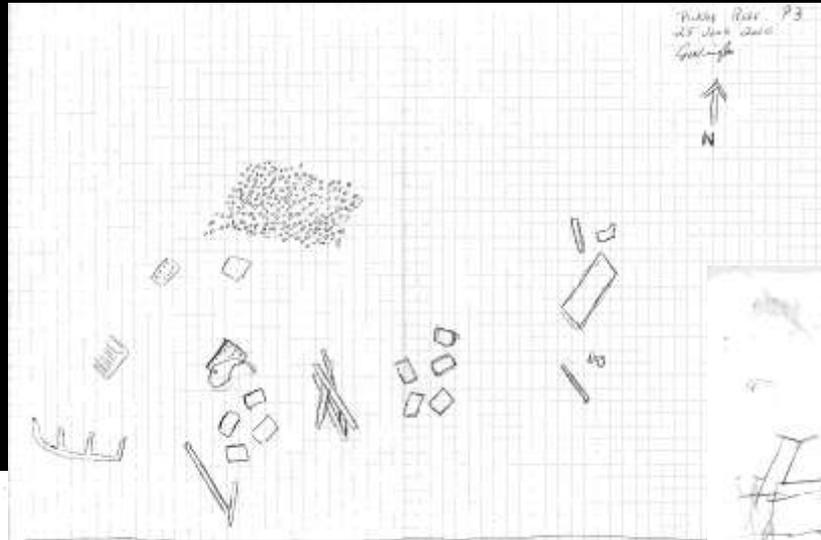
This is an image of the railroad under construction. Note the barrels near the center.

We don't know for certain what was in them, but it may well have been cement.



Although the surge was too active to allow us to use tape measures to map the site in any detail, we were able to take photographs.

The divers are using wide angle lenses, which produced some of the more dramatic shots in this slide show.



To begin documenting the site, we made a number of sketch maps of the area, as well as sketches of groups of distinctive features.

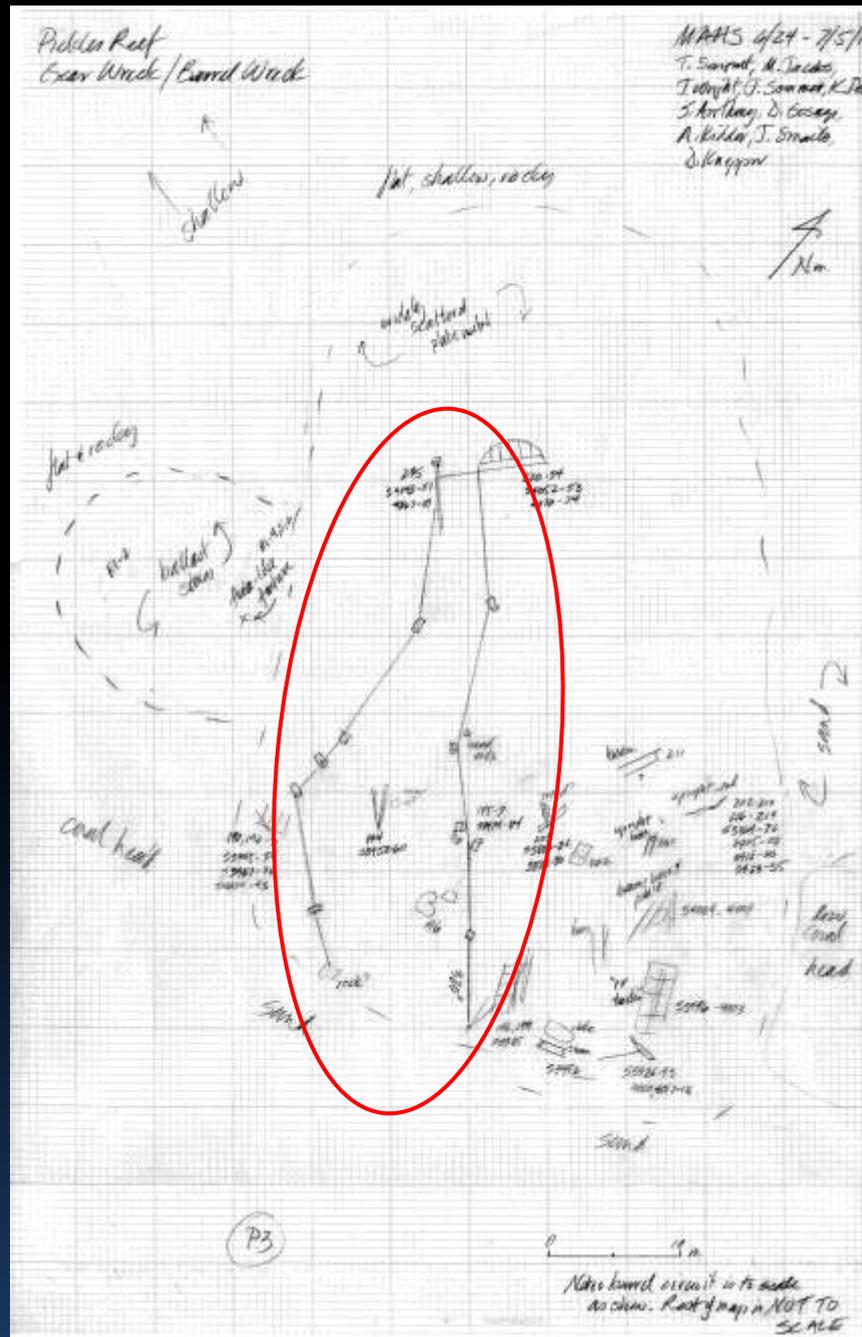
Using these drawings and a number of photographs, we generated a sketch map of the site.

We delineated the greatest concentration of barrels and in spite of the rough water were able to get some preliminary measurements with tapes. The red oval is as outline of the general area where the barrels were found.

Most of the metal debris was to the right of the oval. We are not sure yet what this means. The vessel may have lost most of it's load, then flipped over, or the cargo may have been jettisoned in an attempt to float the vessel off the reef.

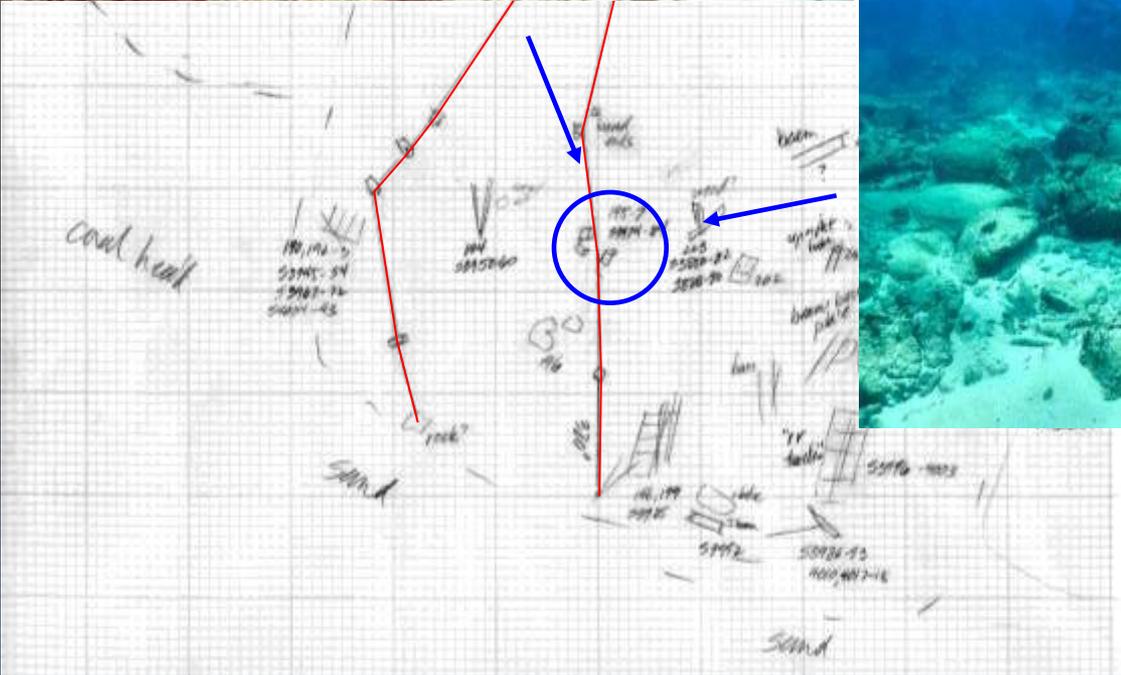
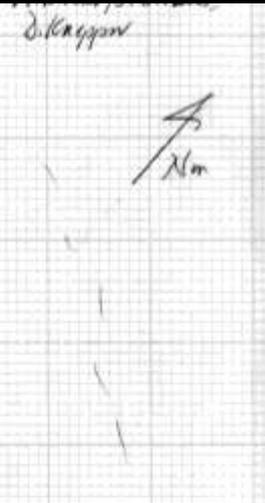
Or there may be more than one wreck present. Records from Key West Admiralty Court indicate that at least 23 ships were reported wrecked on this reef between 1828 and 1911.

We will need to return to the site for more detailed work to determine whether there is more information there to help tell the story.

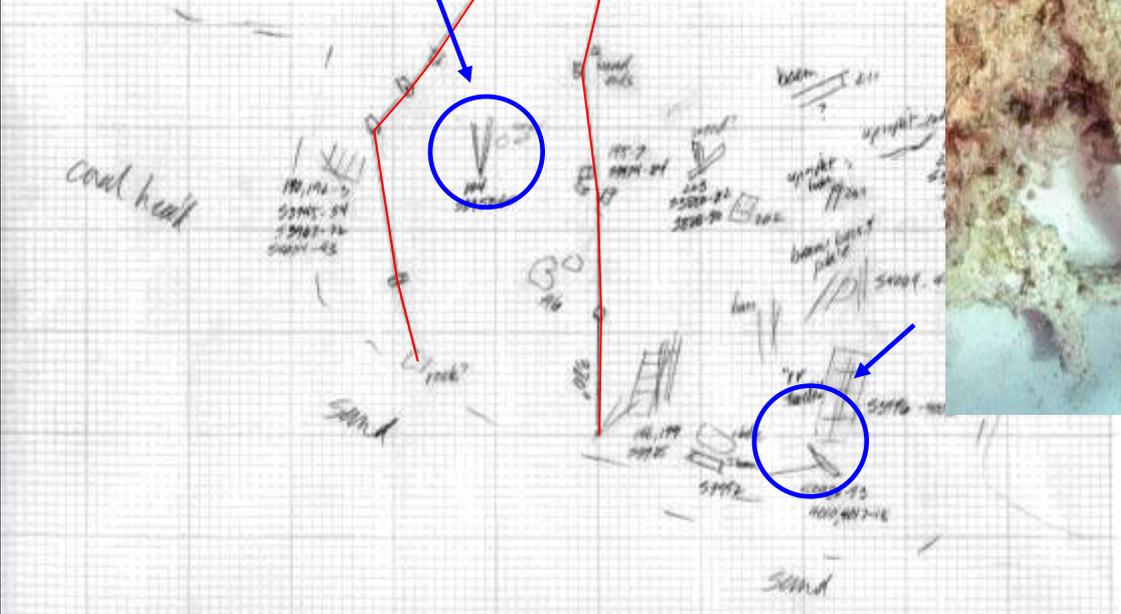
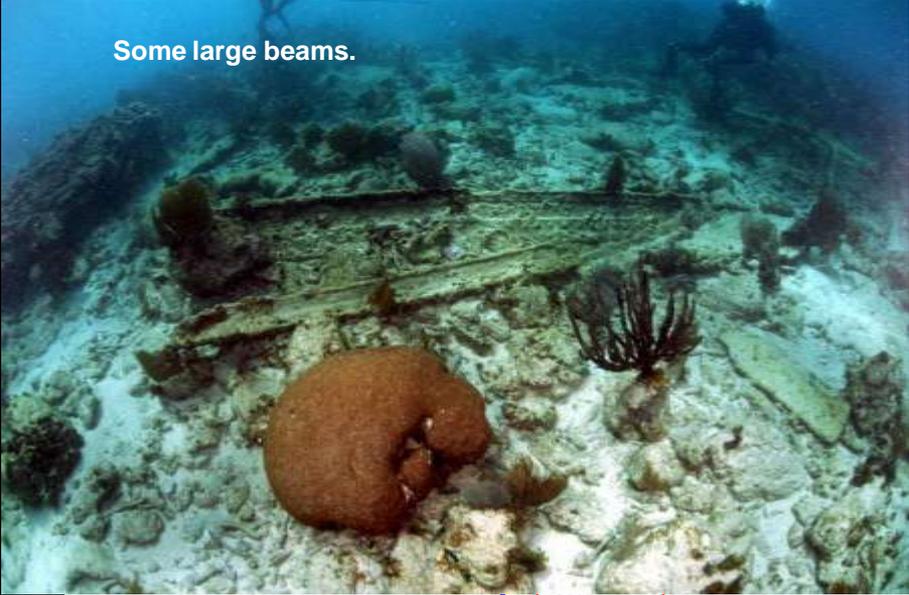


Note that the outline of the barrel distribution is roughly to scale. The rest of the map is not to scale.





shallow  
flat, shallow, rocky  
D. Kappan  
N  
Nm





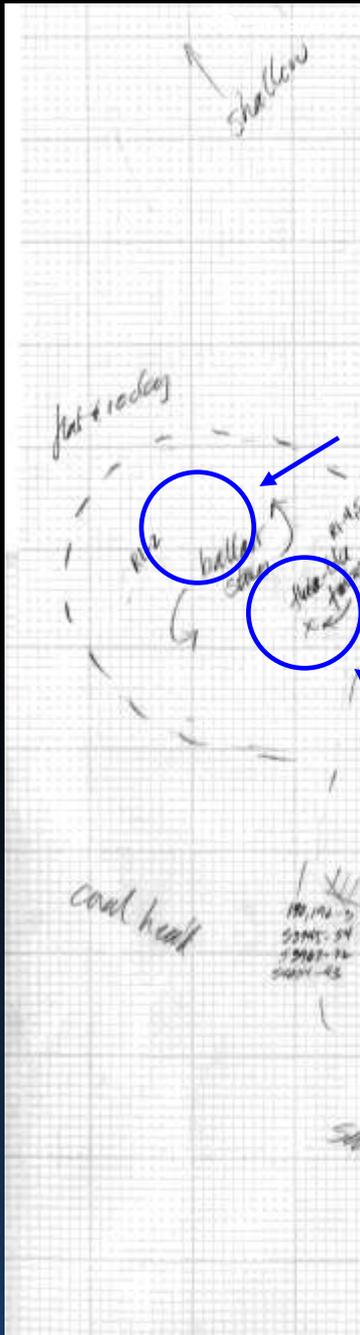
Scattered ballast stone



Fluke-like feature

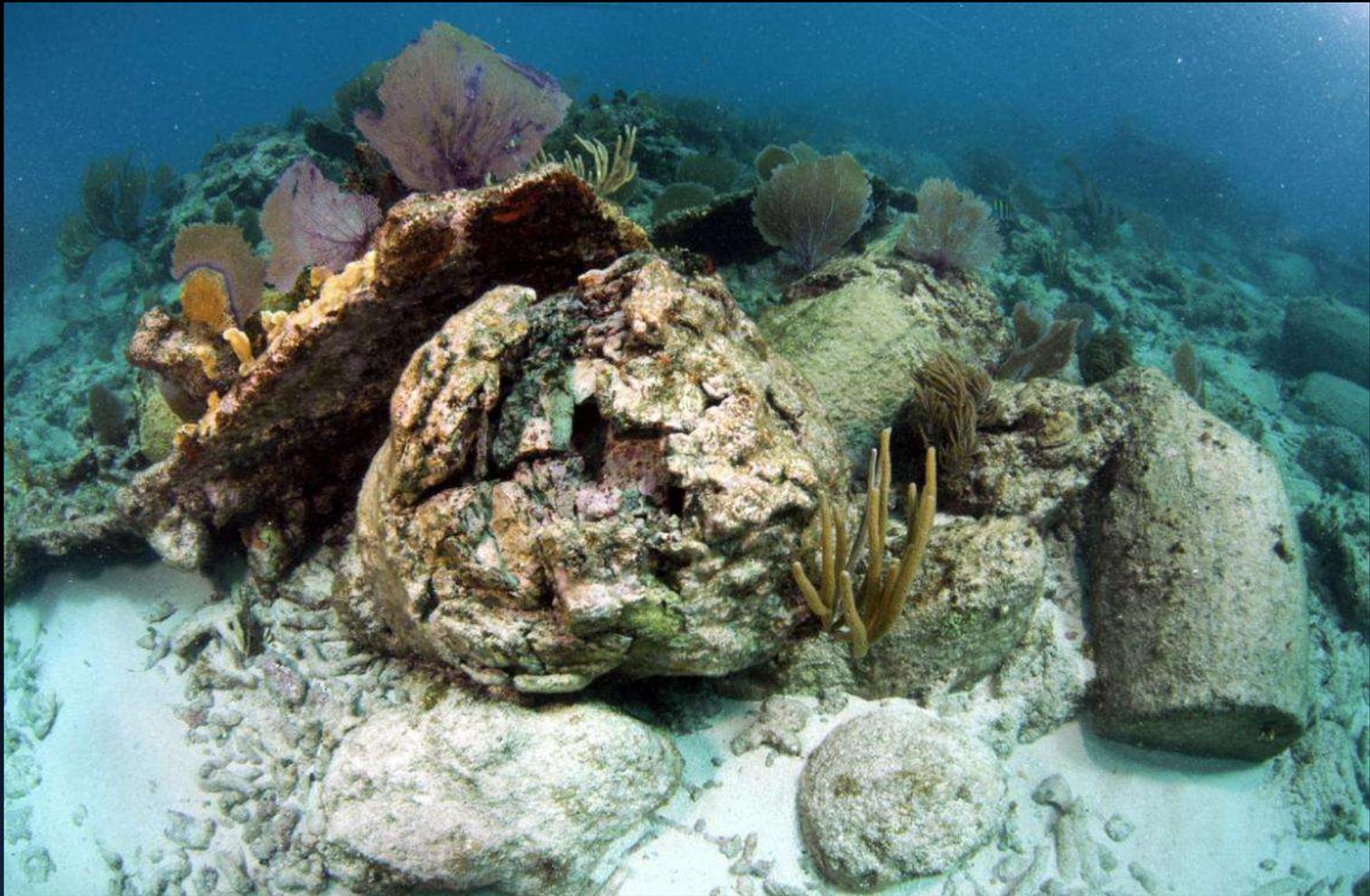


Sand



One of the things we do at the end of each day is to plot and collate data from the day's diving. It's hard to do sometimes, when you're tired and hungry after all day in the hot sun on a rocking boat, but it is best to do when things are still fresh in your mind.





This is what the barrels look like when they exfoliate. Some of them appear to have gotten wet slowly, and the layering effect makes them separate.



Twisted metal debris and some colorful sea life. But notice how the stiff fans are bent over to the right by the surge.



All of the fans and gorgonias are leaning to the right – looks like a windswept plain, with everything blowing in a stiff wind.



Not only were the fans leaning in the surge but the heavy sand was stirred up by the waves.



Two views of one of the boats.

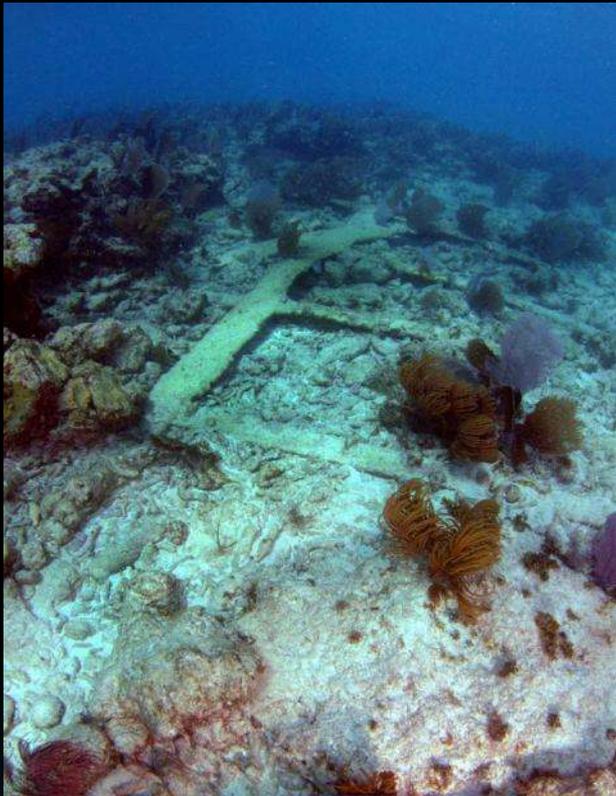
It was hard to climb onto the ladder with the rollers coming in.





And a few more pictures around the Pickles Reef site.





As in the past few seasons, these are the organizations involved in the project:



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



NOAA / Florida Keys  
National Marine  
Sanctuary



Quiescence Diving  
Services





**Jimmy Sommer, Morgan Jacobs, Doug Gossage, Jim Wright, Kip Peterson, Tom Berkey, Jim Smailes, Earl Glock, Dave Shaw, and Dennis Knepper contributed photos for this presentation.**

**Special thanks to John Halas and Brenda Altmeier (FKNMS), Roger Smith (FBHP), and to Rob Bleser and the folks at Quiescence Diving Services.**

