

Flower Garden Banks National Marine Sanctuary  
Coral Spawning 2008  
R/V MANTA Inaugural Trip  
Cruise Report  
Report preparation and image credit: Emma L. Hickerson  
Observation input by all trip participants  
August 21 – 24, 2007

The Flower Garden Banks NMS Research Team and crew loaded up and headed out from the dock at TAMU-Galveston Small Boat Basin at around noon on August 21<sup>st</sup>, 2008, on our inaugural mission on the R/V MANTA. Participants on the cruise were Captains Chuck Currie and Deborah Brock, deckhand, Wes Haizlip, Operations Officer LTJG Tracy Hamburger, and Research Team G.P. Schmahl, Emma Hickerson, Jenn DeBose and Marissa Nuttall. We hosted TAMU-Galveston graduate student, Courtney Holmes. Sea conditions were not so perfect on the transit out – around 4' swells, running very close together. I'll have to be honest and say it wasn't the most comfortable ride out, but we were tied up on the West Flower Garden Banks (WFGB) by around 5pm! Now that was nice!



Fig. 1. Captain Chuck nudges the R/V MANTA into position from the starboard control station.

The current was running at a pretty rapid pace when we lowered the weighted down line, so we picked back up and headed over to the East Flower Garden Bank (EFGB). Even though these two banks are only 12 miles apart, we encountered much better conditions over there. I have a suspicion that the currents that have been fairly prevalent at the WFGB are caused by an eddy that cleaved off the loop current back in about April this year, and has been spinning around out there.

The M/V SPREE was out at the EFGB with a boatload of recreational divers out to witness the coral spawning event, as were the Galatee Film crew from France, on board the M/V FLING. University of Calgary Researchers Peter Vize and Sarah Davies were out with their team supporting the film crew, and conducting their coral spawning and recruitment activities.

Courtney, who is studying the dynamics of phytoplankton and coral spawning, collected water samples. We also took temperature and salinity measurements, making full use of the moon pool located between the dive benches on the back deck of the M/V MANTA.



Fig. 2. Wes Haizlip and Courtney Holmes use the moon pool for water samples collection during the mass coral spawning event.



Fig. 3. Marissa Nuttall and Courtney deploy the YSI temperature/salinity probe through the moon pool, to collect profiles from surface down to 25m.

Spawning was extremely sparse on the 6<sup>th</sup> and 7<sup>th</sup> night after the full moon – so I was beginning to sweat a little, as Galatee had mobilized their entire crew from France and Australia at a very large expense based on our predictions! Galatee Films was collecting footage (actually, one particular scene), for a feature film called OCEANS, which is scheduled to be released in 2009.

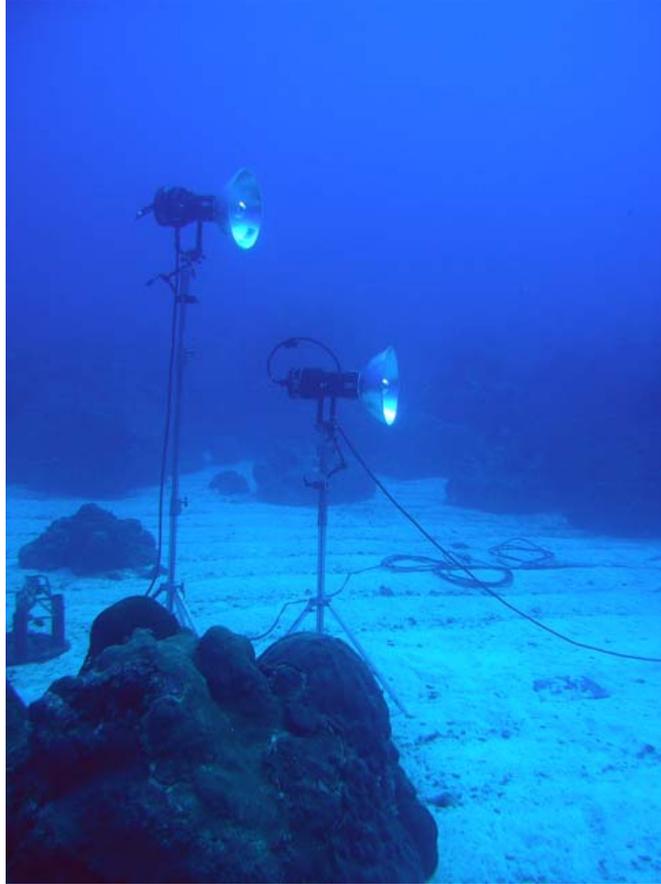


Fig. 4. Galatee Films had an elaborate set on bottom, complete with lights and screens.

On what we predict as the major spawning night, 8 nights after the full moon, the corals did what had hoped for, and spawned quite spectacularly. Jenn also documented quite a large number of squid – *Loligo roperi*, on the reef this night. We didn't however, see any Christmas Tree worms or brittle stars spawning. Ruby brittle stars were reported on the 9<sup>th</sup> night by the M/V FLING. They also reported a hammerhead and silky shark, and a manta ray.

The text below are the details as they were reported to the online coral list:

The following are coral spawning observations made by researchers at the Flower Garden Banks National Marine Sanctuary, located approximately 100 miles south of the Texas/Louisiana border in the Gulf of Mexico. The mass coral spawning event was predicted to occur 7 to 10 days after the August full moon, which fell at 2116 UTC on August 16, 2008, thus, the first night after the full moon was August 16, according to our prediction. It was also predicted that the greatest amount of spawning activity would occur on the eighth night after the full moon, August 23rd, 2008. Time in report is local time, CDT. Observations were made

by G.P. Schmahl, Emma Hickerson, Jennifer DeBose, Tracy Hamburger and Marissa Nuttall, from the Flower Garden Banks NMS office, Peter Vize and Sarah Davies from the University of Calgary, and Jay Reichman from EPA. Water temperature was around 2 C cooler than same time last year, 27.4 to 28.2 C at 20m, 28.6 to 29.1C on surface. No freshwater evident in salinity profiling.

August 21, 2008

6 nights after full moon

2223 *Montastraea cavernosa* male (1)

2252 *Montastraea cavernosa* female (1)

August 22, 2008

7 nights after full moon

2100 *Montastraea cavernosa* male (1)

2130 - 22:00 *Montastraea franksi* (1+)



Fig. 5. Gamete release by star coral, *Montastraea franksi*, during mass coral spawning event.

August 23, 2008

8 nights after full moon

2007-2133 > *Montastraea cavernosa* male (32)

2035-2133 *Montastraea cavernosa* female (6)

2111-2200 *Diploria strigosa* (35)

2117-2220 > *Montastraea franksi* (58)

2215 *Montastraea faveolata* (1)



Fig. 6. Gamete bundles are released by brain coral, *Diploria strigosa* during mass coral spawning event.

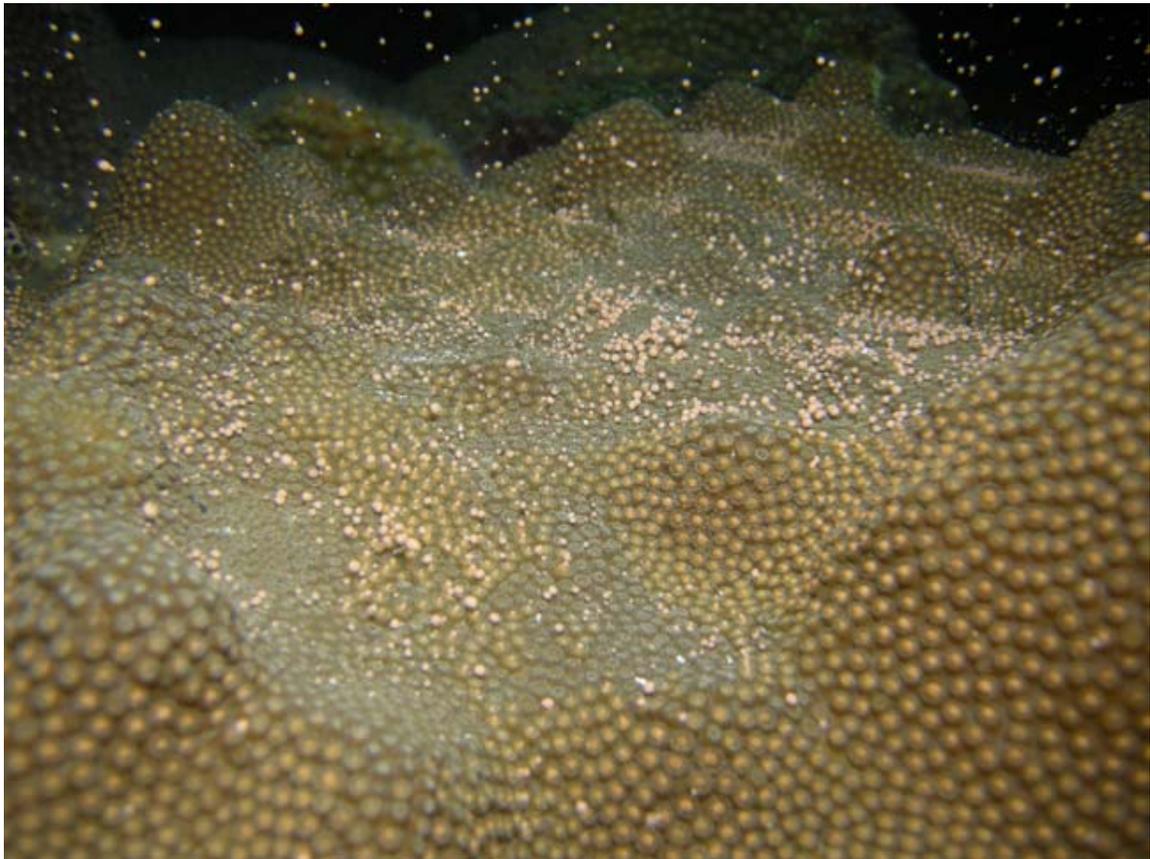


Fig. 7. Star coral, *Montastraea faveolata*, releases gamete bundles, during mass coral spawning event.

August 24, 2008

9 nights after full moon

2215-2300 *Montastraea franksi* (10)

Ruby brittle stars, *Ophioderma rubicundum* males were observed spawning.



Fig. 8 Ruby brittle star (*Ophioderma rubicundum*) collects gamete bundles from star coral (*Montastraea franksi*) to feed on during mass spawning event.

Overall, the inaugural operations off the R/V MANTA once we were on site were very satisfactory. We were well pleased with the layout of the back deck, particularly the features that were specially designed for SCUBA ops – such as the dive benches, camera tables, wetsuit hang racks, jump gates, dive platforms, and ladder design. We'll have to tweak the ladders a bit to incorporate a tie back system so that the ladders don't swing in the swells. We were also fairly pleased with the operation of the NITROX system. The interior layout was comfortable, with plenty of room for equipment, bench space, food preparation, and mealtimes.

RHIB launches, recoveries, and mooring tie ups went quite smoothly. The bridle system worked particularly well with this vessel design.



Fig. 9. Deb begins the process of rigging the bridle to the mooring.

We put the RHIB through its paces when Tracy and Emma did a quick run from East to West Bank, following the R/V MANTA at a fair clip.



Fig. 10. Tracy Hamburger and Emma Hickerson head out on their 12 mile transit from East to West Flower Garden Bank in the 15 ft. RHIB.

Once again, the current was not cooperating for dive ops, so we recovered the RHIB and headed over to Bright Bank to see what activity might be over there. Bright Bank, which is 12 miles to the east of East FGB, has been proposed as a site for sanctuary expansion through the FGBNMS Management Plan Review process. No boats were there, so we returned to East Flower Garden Bank to continue dive ops.

Some other observations of note:



Fig. 11. A beautiful juvenile yellowfin grouper (*Mycteroperca venenosa*)



Fig. 12. Lovely big spiny lobster (*Panulirus argus*) – don't see too many of these at the FGB's these days.



Fig. 13. Decorator crab sporting a large piece of sponge *Agelas clathrodes*.

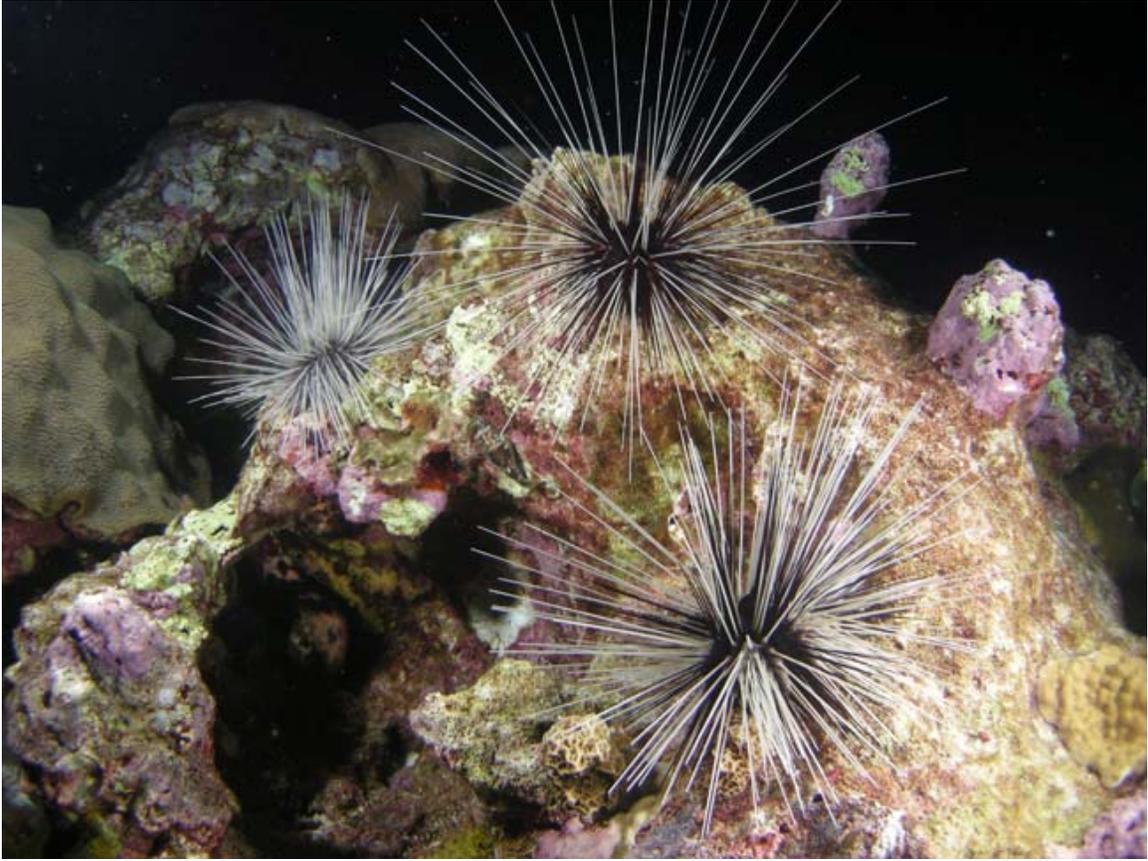


Fig. 14. Spiny sea urchins, *Diadema antillarum*, are making a slow recovery at the Flower Garden Banks after the mass die off event in the early 1980's. Both the white and black spined are prevalent at the sanctuary.