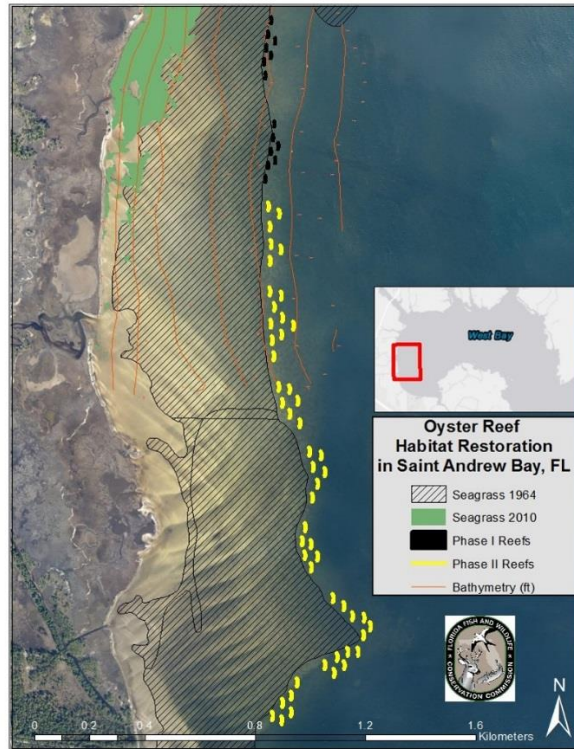


Oyster Reef Habitat Restoration in St. Andrew Bay

Phase II Construction Synopsis



In September and October 2016, the Florida Fish and Wildlife Conservation Commission (FWC) and partners constructed 53 subtidal oyster reef structures, 10 feet wide and 150 feet long. They stretch over two miles of the western shoreline of West Bay, a part of St. Andrew Bay. The edges of the reefs were constructed from biodegradable coir (coconut fiber) mesh bags filled with recycled oyster shells (Figure 1). The center of each reef then was filled with loose recycled oyster shells to create a total of three acres of new oyster reef habitat.

Some 5,000 cubic yards or 2,700 tons of loose shell was used to install the three acres of oyster reef habitat. Oyster shell bags were made of coir or coconut fiber mesh. After some trial and error, this biodegradable material was sewn into a bag using burlap and a sewing machine to seal the seams (Figure 2). Over the course of one month (August – September 2016) approximately 3,000 oyster shell bags were used to build the perimeter wall of each oyster reef structure (Figure 3).

Filling the interior of the reefs with loose shell material was done in stages. The first stage took two days, with approximately 2,500 cubic yards of recycled oyster shell brought to the project site on two barges (Figure 4). Shell material was placed over 28 individual oyster reef areas using heavy machinery, including massive excavators with 70-foot boom arms and buckets that could hold 2 ½ cubic yards per scoop (Figure 5). The second series of oyster shell material, which was held at a site on the North side

of the intracoastal waterway directly across from the B.V. Buchanan Boat Ramp (Figure 6), was placed over 25 individual oyster reef areas using a shell blowing method. High powered water hoses were used to wash and blast the shell off the barge onto the reefs (Figure 7). The rest of the reefs also were filled this way.

FWC biologists consistently monitored the construction of oyster reef structures to ensure desired shape and shell thickness. In some cases, there was not enough shell on the reef and in other cases where there was too much. The reef finalization process took over a month, but construction was finished on Oct. 26, 2016.

Figures



Figure 1: Biodegradable coir fiber bags, filled with oyster shell material, waiting to be moved to the barge that will take them out to the restoration site.



Figure 2: Oyster Shell bag made of biodegradable coir fiber mesh and sealed on the edges with burlap sewed on with a sewing machine.



Figure 3: Biodegradable coir fiber mesh bags being pushed off the barge to be placed on the edge of the oyster reefs.



Figure 4: Barge carrying half of the oyster shell material used in the first stage of the oyster shell deployment.



Figure 5: Heavy machinery used to deposit the oyster shell material from the barges onto the new reefs.



Figure 6: Oyster shell piles at the staging area on the North side of the intracoastal waterway across from B.V. Buchanan Boat Ramp. Jacob Berninger, who is 6' 4", is standing in front of the piles of shells for size perspective.



Figure 7: High powered water hoses were used to wash and blast the shell off the barge onto the reefs.