



GICIA partners with Mote on acoustic tagging at Mercabo Cove

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SUBMITTED BY THE GICIA – In October 2015 the Gasparilla Island Conservation and Improvement Association realized that the perfect storm was brewing; an offer had been made by a resort developer to purchase the Mercabo property located at the entrance to Gasparilla Island. The 30 acres, armored by 4,700 linear feet of seawall, boasted potential for a large resort with 185 wet slips. During this same time period, Charlotte County had renewed efforts to amend its Comprehensive Plan that could have increased density on the site from 3.5 units per acre up to 65 units per acre. The GICIA, generously supported by almost 1,800 individuals raised the \$20M dollars to purchase the property and ensure its

protection from being developed.

Five years after the GICIA's acquisition of the Mercabo site the full-scale restoration is finally complete. Many of the design strategics utilized in the site plan were chosen because they are proven methods that lead to improved water quality, enhanced habitat, and the successful reestablishment of seagrasses. However, the idea of creating a tidal pond, pitched by Mote Fisheries Biologist, Dr. James Locascio has never been tried in a canal system like Mercabo.

Locascio's parents have a home in the area and he enjoys spending time on the waters around Boca Grande. His specialty is the study of sound production of fishes associated

with courtship and spawning. Among other methods, Dr. Locascio has successfully used acoustic tags and receivers in Charlotte Harbor to track spawning snook and juvenile/sub-adult tarpon.

After seeing the plans for the Mercabo site and discussing the GICIA's goals for the restoration, Dr. Locascio suggested that GICIA try to create an area within the basin that would mimic a coastal tidal pond. These small, mangrove-lined tidal ponds, found along the southwest Florida coast, are located at the terminal ends of tidal creeks and are considered critical habitat for the early post settlement and juvenile life history stages of snook and tarpon.

Often these ponds have restricted flow because of their locations deep within the mangrove back country until there is an unusually high tide or major storm event that creates flooding.

During these short periods of time, the coastal pond is accessible to young fish, such as juvenile tarpon and snook that find their way, with the help of active tides, into the protected, shallow areas. Once within the protected area of the tidal pond the juvenile fish lives, eats, and grows with little to no threat of being eaten by larger predators. When the fish is large enough and the pond once again experiences a highwater event, the tarpon or snook escapes into deeper water.

Working with Locascio the GICIA developed specs for an area in the northeast corner of the Cove that has been filled to create a pond feature that is shallow around the outside and slightly deeper in the middle. The shallower edges have been planted with mangroves and the entrance was designed to only allow access to small fish except during extreme high tides. The GICIA is excited about creating an area that will be important to the survival of locally important sportfish, especially since tidal ponds like these are disappearing all along our coast due to development.

Now with the project entering its last phase of seagrass planting, the GICIA is excited to partner with Mote and Dr. Locascio's to utilize their ongoing acoustic telemetry program to monitor the Cove site for snook, tarpon and the federally listed and critically endangered smalltooth sawfish. The GICIA has donated towards the purchase of five acoustic receivers and 15 tags, which will be enough telemetry equipment for the Cove area to be added to Mote's current study. The receivers will be deployed by the end of February and the GICIA will provide information on the study as it becomes available.

Acoustic telemetry is used to track movement patterns of animals. This method requires two components, an acoustic tag which transmits a unique ID and a receiver to detect the signal transmitted by the tag and log its ID along with water temperature, and the date and time of the detection event. The GICIA's goal is to tag snook, tarpon, sharks

and smalltooth sawfish (if we can coordinate with an agency that has a sawfish permit). Acoustic receivers are moored to the sea floor at strategic locations and detect tagged fishes that come within range of the receivers.

The transmission range of the acoustic tag and the detection range of the receiver is generally up to 1000 meters depending on environmental conditions. All of the tags and receivers are compatible with other like tags that are used throughout Florida by other research groups. So, the receivers deployed within Mercabo Cove will detect any tagged fish that swims within range and any fish originally tagged as part of the Mercabo Cove study could be picked up by one of the many receivers deployed in other areas of Charlotte Harbor and beyond. Being able to show that local sportfish are using Mercabo Cove as habitat would go a long way to proving the restoration project a success.

As the GICIA celebrates 50 years working with the Boca Grande Community to preserve island life, the Board of Directors and staff are grateful for the continued support of the island's residents in all GICIA's efforts.

The next time you drive off island, take in the beauty of Mercabo Cove Preserve, then imagine the same site today if there was no GICIA. If you are interested in becoming a member of the GICIA, please contact the office at 964-2667.



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Mercabo Cove