

How Some Bonefish Get Around Grand Bahama

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GRAND BAHAMA IS THE SECOND MOST DEVELOPED ISLAND IN THE BAHAMAS.

During the late 1950s and early 1970s, a couple of major changes to the island's geography were made. First, Hawksbill Creek, a natural system that connected the north and south sides of the island and served as a migration route for bonefish, was severed when a road was created and a shipping harbor was developed. Second, a man-made canal, the Grand Lucayan Waterway (GLW), was constructed to increase the amount of waterfront property for sale in the vicinity of Freeport and to establish a throughway between the shallow Little Bahama Bank on the north side of the island with the deep Northwest Providence Channel on the south side. Since these changes were made, no one has examined the contemporary movement corridors of adult bonefish around Grand Bahama.


By tagging 30 bonefish with acoustic transmitters and deploying 17 listening stations to detect our tagged fish as they swam around the island or through the GLW, we were able to determine bonefish movements during their spawning season between October 2013 and May 2014. With more than 26,000 detections, we found eight adult bonefish used the GLW to move from the north side of the island to the south side. These movements typically corresponded to one to four days either before or after new or full moon phases, which are known to produce stronger tides that can aid in larval dispersal during spawning. Not all bonefish used the man-made canal to go from the north to the south side of the island. Two bonefish went from the north side, around to the west end of Grand Bahama, with one fish continuing east of the GLW for a total distance of approximately 55 miles from its original tagging location. Additionally, two bonefish traveled from the north side of the island, all the way around to the east end of Grand Bahama, at a distance of approximately 50 miles from where they were tagged.

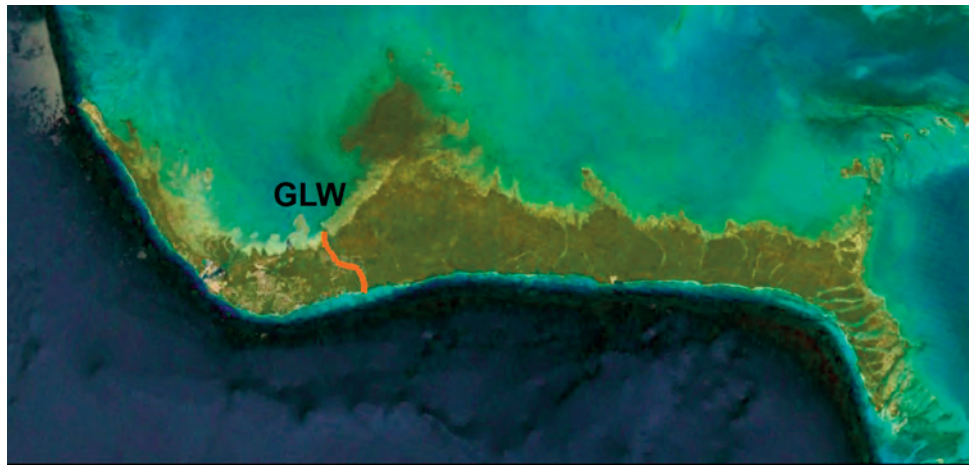


Adult bonefish on the move. Photo by Karen J. Murchie

Findings from this study suggest that nearshore coastal areas are imperative to bonefish as migration routes during spawning season. Also, the GLW, which was not originally constructed as fish habitat, now needs to be managed as such.

The success of this project has been a result of multi-stakeholder collaboration. By partnering scientists from various tertiary institutions with Grand Bahama bonefish experts from H2O Bonefishing, we were able to maximize our limited resources and place listening stations in strategic locations. We are excited to expand our research on the movements of adult bonefish around Grand Bahama during the 2014-2015 spawning season and have added another collaborator to our project – the North Riding Point Club! This time we have tagged more than 50 bonefish and have almost doubled the number of listening stations to not only

get an even better understanding of their movements during spawning season, but also we hope to identify pre-spawning aggregations and even spawning locations by including lots of manual tracking. Knowledge that can help us more effectively manage and conserve bonefish populations is not only great for the multi-million dollar fishery, but also for the ecology of these nearshore systems. 



Map of Grand Bahama with the location of the Grand Lucayan Waterway (GLW) highlighted.

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