

## GOS Bill Terrell Avian Conservation Grant

Grant Recipient: Georgia GNR Wildlife Conservation Section (formerly Nongame Section)

Project: Predator Control for Nesting Shorebirds.

### **Introduction:**

The purpose of this grant was to promote nesting success of priority beach nesting shorebirds and seabirds through predator management, with a focus on the Altamaha and Ogeechee deltas. These two river deltas combine important bars for beach nesting birds, with adjacent upland islands that serve as a major source population for nest predators like raccoon (Fig 1 & 2). Prior research on the Georgia coast has documented the necessity of predator management in order to achieve productivity targets for priority beach nesting birds.

In the Ogeechee delta we focused efforts on Ogeechee Bar and adjacent Raccoon Key, which at low tide are essentially connected by mud flats and marsh islands. Likewise in the Altamaha delta we focused efforts on Little Egg Island Bar and adjacent marsh and upland islands Egg Island and Little Egg Island, which are also connected by mud at low tide. The challenge in managing nesting seabirds and shorebirds on these bars is that every low tide cycle, raccoon are able to access the nesting locations. This means management efforts are required not just on the bar, but also the source of these predators, the larger adjacent upland islands.

Ogeechee Bar can host up to 5 pairs of American Oystercatcher despite its small size. It also typically hosts a small mixed seabird colony every year including Black Skimmer, Least Tern and Gull-billed Tern. Little Egg Bar typically hosts 15 pairs of American Oystercatcher, but has not been used by nesting seabirds since 2015.

We received \$42,500.00 from GOS to fund the purchase of a night vision scope, and to hire trappers to conduct trapping and shooting at several important bird nesting locations on the coast. We were able to conduct predator management activities for four nesting seasons between 2015 and 2018.

### **Actions:**

With GOS funds, we purchased the FLIR thermal imaging scope in the winter of 2015. While we anticipated funding two seasons of trapping, we were able to stretch the funding to cover four seasons in part due to the improved efficiency of predator removal using thermal imaging scopes compared to traditional trapping. Predator removal efforts ranged from shooting with thermal scopes over bait stations, hunting the beach at night with thermal scopes, various traps, and shooting from a helicopter.

In 2015 we hired two trappers. Our 2015 activities included 53 Trips to the Altamaha Delta, with a total of 22 raccoon removed from Little Egg Bar, Little Egg, and Egg Island proper. One coyote was removed from the marsh on Egg Island proper, and 1 hog was removed from Little Egg Island. All were removed by shooting with the night scope.

In 2016 trappers took 69 trips between January 3 and May 30. 24 Raccoon and 2 wild hog were removed from the trapping sites. Trapping effort on the Ogeechee River proved highly successful, with no evidence of Raccoon making it to Ogeechee Bar all season. This allowed the bar to fledge oystercatcher, gull-billed tern, black skimmer, and least tern chicks from the bar. Little Egg Bar efforts were less successful, and despite the number of raccoon taken, there was still significant nest loss to raccoon predation on Little Egg Bar during 2016.

In 2017 our trapper continued to work primarily on the Altamaha Delta, removing close to 50 raccoons. Sadly, before I could receive all the trapping data, our trapper suffered a significant health problem and passed away.

In 2018 we contracted with United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) to conduct predator removal efforts on the Altamaha Delta. They conducted 4 trips to the Altamaha, several involving prolonged overnight stays. These efforts included setting 46 traps, hunting with thermal scopes and aerial hunting from a helicopter. A total of 27 raccoon were removed during the 2018 season.

**Results:**

Predator control is a challenge in the coastal environment, but each year we were able to remove significant number of raccoon from two important nesting locations for shorebirds and seabirds. Despite trapping each year, nest productivity remains highly variable between years. This is due to a number of factors. Even if all predators are removed, a series of high tides can still diminish or eliminate all nest productivity for the year. Predator removal should be seen as a necessary precondition to a successful nesting season. Given good weather, this management will lead to high productivity, without it, even good weather will not counteract the relentless depredation.

During this project window, our best year for Oystercatcher productivity was 2015. Due to weather events, and diminished habitat quality due to hurricanes (Ogeechee Bar was significantly damaged) productivity was low or zero in 2016 and 2017. 2018 also saw good oystercatcher productivity, though not as high as in 2015.

Our targeted productivity for American Oystercatcher to maintain stable or increasing populations is >0.30 chicks per adult pair/year. We were able to surpass this productivity level on the Altamaha and Ogeechee Delta’s in 2015, and the Ogeechee in 2016. We also were able to support a number of nesting seabirds on Ogeechee Bar each year.

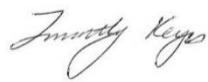
Year	Location	Raccoon removed	AMOY Chicks / Seabird nests	Productivity (AMOY chicks/pair)
2015	Altamaha Delta	22	11 AMOY chicks 15 Least Tern 3 Gull-billed Tern	0.66
2015	Ogeechee Delta	10	6 AMOY chicks 20 Least Tern 8 Gull-billed Tern 11 Black Skimmer	1.5
2016	Altamaha Delta	24	0 chicks	0.0
2016	Ogeechee Delta	9	3 AMOY Chicks 5 Laughing Gull 35 Least Tern 40 Gull-billed Tern 50 Black Skimmer	0.40
2017	Altamaha Delta/Ogeechee	50	0 20 Black Skimmer	0.0
2018	Altamaha Delta	27	5 AMOY chicks	0.25

Budget:

Expenditures of GOS funds:

Dates	Expense	Amount
2015	FLIR Thermal scope	\$8,540.05
2015	2 Trappers	\$3,300.00
2016	1 Trapper & volunteers	\$11,890.49
2017	1 Trapper & volunteers	\$9,592.32
2018	APHIS contract	\$9,000.00
<b>TOTAL</b>		<b>\$42,322.86</b>

Sincerely,



Timothy Keyes

Figure 1. Ogeechee River Mouth showing Raccoon Key and Ogeechee Bar



Figure 2. Altamaha Delta, showing Egg Island, Little Egg Island, and Little Egg Island Bar.

