

Eighteen Years of Goliath Grouper Research in Florida: Documenting the Recovery of an Iconic Fish

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The Atlantic Goliath Grouper (*Epinephelus itajara*) population in US waters has shown substantial recovery following the closure of the fishery to all harvest in 1990. Since then, increased abundance of both adults and juveniles in state waters, including regularly occurring aggregations of spawning adults have been reported. Since 2007 researchers with the Florida Fish and Wildlife Conservation Commission's (FWC) Fish and Wildlife Research Institute (FWRI) and colleagues have been studying this iconic reef species to better understand outstanding gaps in Goliath Grouper life history information. Targeted research efforts have included long-term visual surveys of adult abundance, movement studies of adults offshore and juveniles in estuaries, an age-and-growth comparison of calcified structures collected from individuals following incidental mortality events, and a state-wide cooperative angler program to collect genetic samples. Over the past eighteen years, these efforts have grown in scope and provided novel data and results. For example, the Great Goliath Grouper Count, now in its 16th year, is a cooperative effort between FWC and Florida Sea Grant that has grown from a regional initiative focused on southwest Florida to a state-wide effort that collects information on Goliath Grouper abundance across the state each summer. Comparing ages counted from otoliths to dorsal fin-rays and spines collected from dead specimens allowed us to confirm that this non-lethal sampling method has utility for assessing population age-structure. Fin clips collected in cooperation with commercial and recreational fishers has provided the basis for multiple genetic studies and continues to be a focus of ongoing research. Through these volunteer fin clip submissions, we have documented siblings and parent-offspring-pairs of Goliath Grouper, results that help inform our understanding of population recovery. As Goliath Grouper are increasingly encountered by the public and captured and sampled by ongoing FWRI fishery dependent and independent monitoring programs, we will continue to document their increasingly expanded role as part of the native Florida marine ecosystem. Here we report on some of the successes of this research and identify future research directions that are needed to fill remaining gaps in our understanding of the species and its recovery.