

Migration Ecology and Habitat Use of Atlantic Tarpon Along the Texas Coast

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Movement and population structure are key attributes necessary to understand the population dynamics of Atlantic tarpon (*Megalops atlanticus*) in the Gulf of Mexico. While it is known that tarpon display well developed seasonal migrations, more spatially resolved data on habitat requirements and movements are lacking in Texas. The Texas Tarpon Tagging Initiative, a program under the Gulf Research Institute for Highly Migratory Species, has utilized acoustic telemetry to observe the timing and pathways of tarpon migrations along the Texas coast. This research has demonstrated estuarine-coastal connectivity, repetitive migrations to specific locations and ecological hotspots based on multiple individuals detected. Long term monitoring with acoustic transmitters (battery life of 4-5 years) has revealed annual detections of some individuals, to successive detections occurring several years apart, emphasizing the complexity of migratory pathways used by tarpon. Although the study has had a 50% success rate of detecting individuals tagged with acoustic transmitters, post-release survival of tarpon caught in the Texas catch-and-release fishery is currently unknown. To better understand the influence of angling, handling, and release practices on the post-release survival of tarpon, satellite telemetry (survivorship pop-up archival tag, sPAT) is being used to provide the first estimates of post-release mortality for tarpon in Texas. Tags will be deployed by both recreational anglers and research staff to gain further insight into different handling techniques. An improved understanding of migratory patterns, habitat use and post-release survival is essential to developing conservation needs to rebuild and sustain tarpon populations along the Texas coast.