



Determining marine movement and behavior of the Gulf sturgeon (*Acipenser oxyrinchus desotoi*) in the Gulf sturgeon critical habitat of the Gulf Testing and Training Range and Santa Rosa Island Complex

Project #
09-428

Background:

The Gulf sturgeon was listed as a threatened species in 1991 under the Endangered Species Act (ESA) of 1972. Critical habitat was designated in 2003 and encompasses seven river systems (with their associated estuarine and marine environments) spanning from Lake Pontchartrain in Louisiana to the Suwanee River in Florida. Eglin Air Force Base (AFB) schedules various military activities within the Eglin Gulf Test and Training Range (EGTTR) and the Santa Rosa Island (SRI) Test and Training Range Complex which is in Gulf sturgeon critical habitat. Virtually nothing is known of the ocean movements of Gulf sturgeon except that they spend cool months (October through April) in the Gulf of Mexico. There is currently no scientifically sound data to use in consultations when missions take place within Gulf sturgeon critical habitat areas of the Gulf of Mexico. To facilitate smooth consultations, it is in the military's best interest to determine the presence or absence, general location, and behavior of Gulf sturgeon in the Gulf of Mexico critical habitat. This information is imperative for determining mission avoidance zones for the Gulf sturgeon both temporally and spatially.



Objective:

The objective of this project is to utilize acoustic tracking technology to elucidate Gulf sturgeon behavior in the Gulf of Mexico critical habitat of Northwest Florida. Forty Gulf sturgeon that were previously tagged in a 2008 pilot study were acoustically tracked. In addition, 40 more sturgeon from other river systems were tagged and tracked for this project (80 fish total tagged by Eglin AFB).

Summary of Approach:

Coded transmitters were surgically inserted into the abdominal cavity of the Gulf sturgeon during August and September 2009. The fish that were tagged were adults greater than 50 pounds and were caught using drift nets. A total of 40 Gulf sturgeon were tagged in the Yellow River (12 adults), Blackwater River (25 adults), and the Escambia River (3 adults). Each sturgeon was implanted with a Vemco® V16-5H coded acoustic transmitter. Their movements were tracked with arrays of stationary data-logging hydrophone receivers (Vemco® Model VR2W).

A total of 21 receivers were deployed in the Gulf of Mexico (9 receivers), Santa Rosa Sound (4 receivers), Pensacola Bay (2 receivers), Pensacola Pass (2 receivers), Yellow River (1 receiver), Blackwater River (1 receiver), and Escambia River (2 receivers). The receivers were deployed in September and October 2009 and were downloaded approximately once every 6 weeks. Based on the results from the 2008 pilot study suggesting that Gulf sturgeon leave the Gulf of Mexico to head back to the rivers in March, the final data download and receiver collection occurred between April and May 2010.

Benefit:

The distribution and movements of Gulf sturgeon in the Gulf of Mexico is unknown. Since Eglin AFB schedules military activities that occur in the Eglin EGTTR and SRI Test and Training Range Complex located within Gulf sturgeon critical habitat, the findings from this project will help determine Gulf sturgeon's current habitat use in this area. This information will allow Eglin AFB to comply with the ESA by conducting meaningful section 7 consultations and to mitigate for potential impacts to this federally protected species.

Accomplishments:

Of the 40 sturgeon that Eglin tagged in 2009 from the Yellow, Blackwater, and Escambia Rivers, 39 were detected between October 2009 and May 2010. Eglin's receivers in the Gulf of Mexico and Santa Rosa Sound also picked up detections from other sturgeon including tagged sturgeon from the 2008 pilot study and from a University of Delaware Gulf sturgeon study in the Choctawhatchee Bay area. Based on this data, preliminary results of their movement and distribution trends have been determined, however given some variations in the results between the 2008 pilot study and this study, a few more years of tagging and tracking are required to determine more accurate and conclusive results. These results can then be compiled and potentially published in a peer-reviewed scientific journal.

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