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# A Larval Gulf of Mexico Sturgeon (*Acipenser oxyrhynchus desotoi*) from the Apalachicola River, Florida

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## A LARVAL GULF OF MEXICO STURGEON (*Acipenser oxyrhynchus desotoi*) FROM THE APALACHICOLA RIVER, FLORIDA

A larval Gulf of Mexico sturgeon (*Acipenser oxyrhynchus desotoi*) was collected in the upper Apalachicola River, river km 167.7, 3.3 km below Jim Woodruff Dam on May 11, 1977. It represents the first recorded capture of a larval Gulf of Mexico sturgeon.

Technical literature concerning Gulf of Mexico sturgeon is limited to description of adult subspecies (Vladykov, 1955; Vladykov and Greeley, 1963), report of commercial landings (Fiedler, 1930-1934 and Johnson, 1956-1973), and life history work by Huff (1975). Huff did not succeed in capturing larval sturgeon in the Suwannee River, Florida, thus spawning temperatures, flows, and larval meristics have not been documented.

### MATERIALS AND METHODS

Larval fish sampling was one of the methods used by the Apalachicola River Fishery Project in an attempt to determine spawning and nursery areas of the river. From February 1977 to May 1977, 16 stations along the Apalachicola River were sampled weekly utilizing 10-minute bottom trawling plankton tows. Sampling was conducted using a size 00 (760  $\mu\text{m}$  mesh) plankton net having a diameter of 0.5 m. The net was fished no higher than 2.3 cm off the bottom. Meristic measurements were obtained from enlarged microphotographs adjusted to scale. Measurements followed Hubbs and Lagler (1974).

### RESULTS AND DISCUSSION

At the time of the larval sturgeon's capture, surface water temperature was

23.9° C., water depth 4.2 m, flow of 365 m<sup>3</sup>/second, velocity of 67 cm/s, with sand and gravel substrata. The larval sturgeon was identified by project personnel. Verification was provided by William Dovel of Boyce Thompson Institute, Yonkers, New York, and Dr. Archie Carr of the University of Florida, Gainesville, Florida.

Development of yolk sac, eye and extent of connection between head and yolk sac indicated the larva was freshly hatched (within 1-2 days) according to Ryder (1890). Mansueti and Hardy (1967) found that in Atlantic sturgeon (*Acipenser oxyrhynchus*), incubation occurs within 94 hours at 20° C and 168 hours at 17.8° C. At 23.9° C the larva would have hatched approximately 80 hours after fertilization. Back-calculating 80 hours for egg development plus one or two days for larval age indicates a probable spawning period of May 5-7, 1977. Water temperature during the sturgeon spawning season of May 5-7, 1977 was 22.5° C-23° C with flows of 588-846 m<sup>3</sup>/s ( $x = 724$  m<sup>3</sup>/s) and velocities of 79.8-80.7 cm/s ( $x = 80.3$  cm/s). This period was at the end of spring high water.

Measurements (in mm) of the specimen are 9.71 total length, 3.27 anal opening to tip of tail, .93 depth, .81 head length, .35 snout length, .23 suborbital width, .17 orbit length. Complete myomere counts were impossible due to larva density.

The specimen has been deposited in the Tennessee Valley Authority Regional Larval Fish Identification and Information Center, Norris, Tennessee.

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