

MERCURY BIOACCUMULATION IN LONGNOSE GAR (*LEPISOSTEUS OSSEUS*): A PRELIMINARY POPULATION SURVEY

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Mercury is one of the most widely spread environmental contaminants. Increased atmospheric dispersion and deposition of mercury make it nearly ubiquitous in aquatic ecosystems, where it is converted into methylmercury – a more toxic and bioavailable form. Mercury biomagnifies in the food web and predatory fish tend to bioaccumulate mercury in their muscle tissues. Many species of fish show a positive correlation between length and muscle mercury concentration. Longnose gar (*Lepisosteus osseus*) are long-lived, apex predatory fish. They are euryhaline and can be found in quiet waters, ranging from fresh to brackish habitats. A study of the mercury bioaccumulation patterns in two estuarine populations found that those longnose gar did not exhibit the typical pattern of a positive association between length and muscle mercury concentrations found in many species of fishes. The objective of the current study was to conduct a survey of a population of longnose gar from the Edisto River estuary and to collect samples for future mercury analysis, evaluating whether the pattern seen in estuarine populations holds for Edisto estuary gar. DNR provided a sample of eight female and seven male longnose gar from the estuary. They were measured, sexed, and muscle tissue samples were collected. Fish



Marilyn preparing to age a gar.

were aged using sectioned sagittal otoliths. The fish sample had a mean standard length of 592 mm (+/- 97.6) and an average age of 7 years (+/- 4.5). There was a positive relationship between age and standard length (male $r^2 = 0.35$, female $r^2 = 0.67$). Females attained a larger size at age than males. Additional work, including a larger sample size, is necessary to form a meaningful comparison among the populations. Future work will include collecting more specimens from the Edisto population, collecting specimens from exclusively freshwater populations, and analyzing tissue samples for mercury concentration.