POPULATION GENETICS OF JUVENILE AND ADULT TARPON FROM COASTAL AND ESTUARINE HABITATS OF FLORIDA – PROGRESS REPORT

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Genetic characterization of the population structure of fishes often relies on relatively small numbers of animals collected over the broad habitat range of the species. Previous studies on tarpon show hints of genetic differences around the Gulf of Mexico and Caribbean Sea. However, the magnitude of genetic variability within a region has not been fully characterized, and analysis of this variability will help determine the degree of panmixia and possible metapopulation structure of tarpon.

Intensive sampling of tarpon around Florida has generated a very large number of tarpon DNA samples that are presently undergoing analysis. Fishing guides and local anglers in and around the Indian River Lagoon participated in the "Tarpon Fishing for Science" tournaments in 2004 and 2005 collected fin clips of over 200 tarpon ranging from 10 cm juveniles to 50 kg adults. Researchers and anglers from other regions in Florida proved another 150 fin clips from juveniles and adults from the Tampa Bay region, southwest Florida and the Florida Keys. Mitochondrial and microsatellite DNA extracted from these fin clips is presently being sequenced for analysis of the genetic structure of inter- and intra-cohort variability throughout the geographic region.

An evaluation of the changes or stability of the genetics of Florida tarpon populations over a 50 year time span has been made possible by discovery of an archived series of scales collected by R.A. Wade during the mid-1950s from the Florida Keys and the west coast of the state. These scales were utilized for his initial study of the age structure of tarpon populations in the region. Scales from 340 adults contain dried epithelial tissue, and efforts are under way to extract and analyze the DNA of these historical samples.