

Poster #6

Plasma Thyroxine (T4) Levels in Juvenile Alligators Collected from Lake Okeechobee and the Northern Everglades

Mark P. Gunderson, Dielrich S. Bermudez, Teresa A. Bryan, Thea M. Edwards,
Matthew R. Milnes, Allan R. Woodward, Louis J. Guillette

Department of Zoology, University of Florida, P.O. Box 118525, Gainesville, Fl. 32611

e-mail: mgunderson@zoo.ufl.edu, telephone: 352-392-1098

Circulating levels of thyroxine were investigated in American Alligators (*Alligator mississippiensis*) from south Florida wetlands. The goal was to investigate and compare thyroxine levels in animals from 2 sites on Lake Okeechobee and one site in the northern Everglades. In this two year study, animals were collected during the month of May 1999 and 2000 (approximately 30 animals from each site per year). The animals from Lake Okeechobee were collected such that they could be separated into groups taken from the West and South areas of the lake, as well as a conservation area in the Everglades. In May 1999, Conservation Area 3A animals (6.25 \pm 0.57 ng/ml) had higher levels of circulating thyroxine than animals from Belle Glade (3.89 \pm 0.28 ng/ml, $p=0.0006$) (area with extensive sugarcane farming) and Moonshine Bay (4.17 \pm 0.29 pg/ml, $P=0.0008$) (reference site). In May 2000, Conservation Area 3A animals (10.04 \pm 1.047 ng/ml) had higher circulating thyroxine levels than animals collected from Belle Glade (7.56 \pm 0.56 ng/ml) ($p=0.047$). Our reference site Moonshine Bay (8.76 \pm 0.55 ng/ml), located on the west side of Lake Okeechobee had circulating thyroxine levels that were not significantly different from Conservation Area 3A ($p=0.2211$) or Belle Glade ($p=0.1861$). No sexual dimorphism was observed within any of the sites in either year (May 1999: Conservation Area 3A $p=0.9219$; Belle Glade $p=0.9876$; Moonshine Bay 0.4582; May 2000: Conservation Area 3A $p=0.5969$; Belle Glade $p=0.1401$, Moonshine Bay $p=0.1380$). Studies are underway to determine if these observed differences correlate with contaminant levels present in the animals collected from each of the sites.