

Low Clutch Viability of American Alligators on Lake Apopka

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ABSTRACT - Clutch viability of American alligators was evaluated on lakes Apopka, Griffin, Jessup, and Okeechobee, Florida, during 1983-86 to examine its association with alligator population trends. Clutch viability was lower ($P < 0.05$) on Lake Apopka and higher ($P < 0.05$) on Lake Griffin than on any other lake. Annual clutch viability rates declined ($P < 0.05$) on Lake Apopka during the study, but no trends in viability rate were detected on other lakes. Juvenile alligator density was relatively stable during 1980-87 on lakes Griffin and Jessup, but plunged to 10% of the 1980 level on Lake Apopka ($P = 0.002$), coincident with falling clutch viability. Viability rates were not related to clutch size but did increase with clutch weight ($P = 0.013$). Egg banding rates declined on lakes Apopka and Jessup and increased on lakes Griffin and Okeechobee. Unexplained mortality of large alligators was commonly observed on Lake Apopka. We discuss several possible causes of low clutch viability including pesticide contamination, shifts in the age structure of the breeding population, and density-related stress of the adult population, and we recommend a course for further investigation.

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