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SURVIVAL OF FARM-RELEASED AND WILD ALLIGATORS

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During 1988, a program was initiated in Louisiana to permit alligator egg collections from the wild on private lands to produce hatchling alligators for commercial propagation for skins and meat. In order to maintain wild populations in areas with egg collection programs, regulations required that a portion of the alligators hatched in captivity from wild-produced eggs be returned to the wild. The number released was to equal the number of young that would have survived if the eggs were to hatch naturally.

The release program was based on the assumption that survival of farm-raised alligators did not differ from the survival of wild alligators of similar size. A better understanding of survival of farm-raised alligators is necessary to evaluate the impact of Louisiana's egg collection program on wild populations. Under the current management program, farm-raised alligators are released in many wetland habitats of Louisiana, and released alligators may eventually constitute a substantial portion of the wild breeding stock in certain areas. The success of this program is dependent on the survival rate of released alligators, the proportion of eggs collected in the area, time required to reach sexual maturity, and reproductive success. The objective of this study was to compare the survival rate of farm-raised alligators released in a freshwater marsh to that of wild alligators occupying the release site. The study was conducted in LaFourche Parish, Louisiana, on the 50,000 acre Golden Ranch Plantation.

Survival of wild and farm-raised alligators was estimated by 3 methods: radio telemetry, mark-recapture, and recovery of tags of cannibalized alligators from stomachs of predator alligators taken during a harvest. For radio telemetry, we randomly selected 50 farm-raised alligators from a group scheduled for release on Golden Ranch. The alligators were fitted with radio collars and released 26 July 1991. Forty-eight wild alligators of approximately the same size were captured in the vicinity of the release site in an intensive study area and fitted with radio collars between 2 July and 5 August 1991.

From May 1991 - August 1992, 2166 subadult wild alligators were captured, measured, tagged, and released in the area. Each alligator was marked with two like-numbered monel web tags. From 1989 to 1992, 3361 farm-raised alligators were released on Golden Ranch. Tag numbers were recorded from all alligators recaptured during night capture sessions, and the alligators were sexed, weighed, measured, and released.

Telemetry data did not indicate a difference in the survival of wild and farm-raised alligators during the summer or winter seasons. The extra weight of the radio collars apparently restricted movement of the alligators and reduced their ability to avoid predation by larger alligators. Mark-recapture data indicated that the recapture rate of wild alligators (0.48%) was 77.8% greater than the recapture rate of farm-raised alligators (0.27%), which is an indication of the number of animals surviving in each group.

In 1991, tags from one wild and 27 farm-raised alligators ($X^2 = 13.98$, 1 df, $P < 0.01$) were recovered from the stomachs of 455 harvested alligators. In 1992, tags from two wild alligators and 36 farm-raised alligators were recovered from the stomachs of 419 alligators taken in the harvest. The cannibalism rate of farm-raised alligators was considerably greater than the rate of their wild counterparts.

The study disclosed that survival of farm-raised alligators was considerably less than the survival of wild alligators. Cannibalism was the main source of mortality and the chances of being preyed upon by a larger alligator was 13 times greater for farm-raised alligators than for wild alligators of the same size. Few farm-raised alligators survived more than two years after release on the study area. If all alligator eggs were removed during the egg collection program and farm-raised alligators were to be used to maintain the wild population, the wild population would be greatly reduced after several years, especially with a controlled harvest that removed 5 - 10% of the alligators each year.

Some landowners attempt to collect all alligator eggs in a particular area, but a portion of the nests escape detection. However, nests that go undetected may not produce enough young to maintain the wild population. Information is needed on the alligator population response to different egg collection rates in association with different alligator harvest rates.

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