Radio Telemetry Tails Alligators

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Last of a series of three articles regarding the Rockefeller Wildlife Refuge giving information of its work, purpose and benefits, based on an interview and data received from Ted Joanne, research leader in the Refuge Division of Louisiana Wildlife and Fisheries Commission.

If man can be traced through space to the moon, why not an alligator in the marshes of Louisiana?

It has become apparent in the past decade that radio telemetry can contribute significantly to the field of wildlife management. Ted Joanne, in association with Larry McNease of the Louisiana Wildlife and Fisheries Commission, initiated a telemetry study of the nesting female alligators at the Rockefeller Refuge during the summer of 1969.

The use of radio telemetry allows a more comprehensive study of the alligator in its environmental niche than was possible in the conventional methods of marking and recapturing. This experimentation provided the means of collecting data through daily monitoring of seasonal movements of individual alligators. From this has come herefore unknown facts regarding habitat preferences, environmental needs of successful breeding and hatching of offspring, management implications and harvesting procedure.

Intensive studies of the alligator’s life history started at the refuge in 1959, have culminated in these unique experiments that have led to the possibility that the alligator can not only be preserved but be used as a practical renewable resource.

Why?

Why has the alligator deserved so much attention?

Due to excessive hunting pressure the alligator population of the state has declined from about 50,000 in the 1930's to approximately 2,500 in the 1960's. This decline was

MATERIAL INSTINCT — Female alligators do not generally show defensive anger seen here in protecting their nest, however, there present is needed. When young alligators are hatching they begin calling. This alerts the mother and

she removes with her mouth the next material covering her young. Should the mother be killed before time of hatching, it is unlikely the young will survive due to suffocation and starvation.

THROUGH REFUGE

In a short time, this development included a network of canals along the entire coast which provided hunters and trappers convenient access to the nests where for hunting alligators and fur-bearing animals. During periods of drought alligators went to the canals and were killed by the thousands.

A species as vulnerable as the alligator, not known for its high IQ, could not withstand这种 indiscriminate killing. In 1959 the first laws were passed aimed at protecting the alligator. A size limit and maximum season length was established, and in 1963 the season was closed statewide.

Telemetric Study

VHF tracking transmitters and receivers equipped with whip type antenna that emitted pulse signals, were constructed for the telemetry study. The transmitting components were mounted on a neck collar attachment constructed of heavy rubberized fabric. Portable VHF tracking receivers with corresponding channels tuned to frequencies of the transmitters used.

The collar was adjusted to fit the neck of the alligator with the antenna always upright. During the collaring procedure, which took about an hour, a sack was placed over the head of the alligator to keep it in a semi-relaxed state. After release, the collar did not appear to disturb the reptile in any way.

The telemetric study added information that already gathered by an intensive study of the nesting ecology of female alligators. This 1964-1968 investigation was assisted by recorders equipped with trip wires stretched across the nest to record alligator movement.

RESULTS

The information gathered has made Rockefeller Refuge a nationwide center of study of the alligator. Unknown data now adds to the knowledge of this reptile include preferable

nest location, marsh type, nest dimensions, egg cavity, vegetation used in nest construction, size of the female, activity of female at the nest, date of hatching, water level, humidity, environment and predatory habits of other animals on the unhatched eggs.

Management implications indicate that the control of water levels is important. The use of weirs is beneficial.

Protection is warranted during the crucial period between egg laying and hatching of the young. If the female is destroyed during this period, there is little likelihood that the eggs will hatch.

Harvest

Harvest regulations which resulted from this study are aimed at protecting the alligator as well as the livelihood of the trapper and tanner: (1) Set the season to begin in mid-September (post-hatching) and continue to winter dormancy. (2) Confines hunting activities to bayou, canals and open water lakes. (3) Prohibit all hunting in the marsh proper at any time.

By setting the season after the young have hatched, the new hatch will be available for restocking should the female be harvested. By restricting hunting to canals and bayou

RECORDS — During alligator studies, nests were equipped with movement and temperature recorders. The temperature was recorded on a clock driven chart. One thermocouple was placed inside the nest to record continuous nesting temperatures; the other was located outside to record air temperature comparisons. The movement recorders were equipped with a trip wire stretched across the nest to record movement of the female.