

**Distress calls of caiman, *Caiman crocodilus fuscus*,
in northern Costa Rica**

John Allsteadt and Christopher Vaughan

Programa Maestría En Manejo de Vida Silvestre, Universidad Nacional, Heredia, Costa Rica.

(Recep. 27-XI-87. Acept. 21-XII-88)

Caño Negro National Wildlife Refuge (10° 54'N, 84° 47'S.) is one of four protected areas in Costa Rica with more than 1000 ha of habitat suitable for the Central American caiman, *Caiman crocodilus fuscus* Cope (see Vaughan 1983). We captured and marked 91 individuals (a total of 103 captures) between 11 March and 23 July, 1986. Distress "calls" were emitted in 25 captures by individuals of the 0.4-1.2 m range in total length. Larger caiman did not call when captured. Nonetheless, caiman of apparently all sizes returned calls of captured individuals.

One night our guide imitated these distress calls and two additional caiman responded with bellowing calls from the swamp. One individual thrashed the water violently. Then a fourth caiman, about 1.2 m in size, approached to within 5 m of the canoe after swimming over 10 m. Despite our attempts to capture the caiman, it remained very close to the boat for about 30 min. until we released a small caiman which did not call when captured. On another night a 1.6 m caiman surfaced and swam to our canoe shortly after our helper called. Three large caiman also answered his calls from less than 100 m away and continued to call for more than five minutes after he had stopped. In these two cases caiman response to call imitation may have been followed by reaction to each other's calls.

We think that distress calls evoked protective behavior in adult caiman which bellowed and

thrashed the water. Gorzula (1978) reported that an observer was chased by a 1.28 m adult caiman after he had captured a 0.61 m individual. A distress call apparently saved a hatchling caiman from a stork, *Jabiru mycteria*, when an adult reacted to the call and chased it away (Romero 1983).

Distress calls may serve additional functions in social behavior. An adult female emitted warning calls upon human approach and the young became more wary (Staton and Dixon 1977). The distress calls of young may also serve to alert other nearby individuals to possible danger. This is probably a "fortuitous effect" (Staton 1978) of the primary function to cry for assistance from young to adults. Occasionally (when approached by humans) adult caiman in Caño Negro emitted, without apparent provocation, a low pitched grunt similar to that described by Staton (1978). It is likely that the function of the caiman distress call change ontogenetically. Later in life the call may be utilized by adults to define their territory within the population structure.

ACKNOWLEDGEMENTS

We thank the Associated Colleges of the Midwest for supporting this study and Pio Sirias Espinosa for his key assistance in the field. Many thanks to Douglas Robinson for reading the manuscript.

REFERENCES

- Gorzula, S. 1978. An ecological study of *Caiman crocodilus crocodilus* inhabiting savanna lagoons in the Venezuelan Guayana. *Oecologia* 35: 21-34.
- Romero, G. A. 1983. Distress call saves a *Caiman c. crocodilus* hatchling in the Venezuelan llanos. *Biotropica* 15: 71.
- Staton, M. A. & J. R. Dixon. 1977. Breeding biology of the spectacled caiman, *Caiman crocodilus crocodilus*, in the Venezuelan llanos. U. S. Fish Wildl. Serv. Rep. 5: 1-21.
- Staton, M. A. 1978. "Distress calls" of crocodylians-whom do they benefit? *Amer. Natur.* 112: 327-332.
- Vaughan, C. 1983. A report on dense forest habitat for endangered species in Costa Rica. Departamento de Publicaciones de la Universidad Nacional, Heredia, Costa Rica, 55 p.