

CONSERVATION RESEARCH REPORTS

Conserving an Amazonian River Turtle Using a Community-based Sustainable Harvest of Eggs

The exploitation of South American river turtles as a food source has long been considered the main factor contributing to the decline of populations. Along a stretch of the Aguarico River (Ecuador), CAPUTO ET AL. (2005. *Biological Conservation* 126:84–92) investigated the spatial and temporal distribution of Terecay (*Podocnemis unifilis*) nests, factors affecting nest success, and the effect of offering a reward for each hatchling captured on the pattern of egg consumption by the local human community. Flooding appears to be particularly important in this Amazonian region, destroying 63.1% of all nests, which is in excess of the number of nests needed to satisfy the local community's consumption needs (28.2%). The proposed reward for each hatchling ensured the voluntary participation of the Cofan people in the Terecay conservation project, leading to: (i) nests being harvested only from sites where hatching possibilities were very low, (ii) efficient management and protection of nesting beaches with abolition of poaching of nests and adult females, and (iii) transplantation of nests from sites that would be flooded (and whose yield exceeds human consumption). Therefore, we argue that in this area of Aguarico River both biological and social conditions favor the establishment of a sustainable harvest of Terecay eggs.



SANDY BARNETT

Populations of Terecays (*Podocnemis unifilis*), a South American river turtle, may be able to sustain a controlled harvest of eggs in at least one part of the Aguarico River system.

Genetic Diversity of Amazonian Crocodilians

FARIAS ET AL. (2004. *Animal Conservation* 7:265–272) used the mitochondrial cytochrome *b* gene to study the population genetic structure of *Melanosuchus niger* (Brazil: Negro and Purus Rivers, Lake Janauacá; French Guiana: Kaw River swamps), and *Caiman crocodilus* (Brazil: Purus River, Lake Janauacá; French Guiana: Kaw River swamps). Analyses indicated that isolation-by-distance was an important population dynamic in *M. niger*, but were unable to differentiate between isolation-by-distance, historical fragmentation or range expansion in *C. crocodilus*. Hypotheses of demographic expansions were supported in one out of four and two out of three sampled localities of *M. niger* and *C. crocodilus*, respectively. Populations of *M. niger* in central Amazonia also appeared to show differ-



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Black Caimans (*Melanosuchus niger*) are relatively sedentary habitat specialists. Genetic studies indicated that more geographically distant populations and those associated with different water types are more genetically distinctive.

entiation that was correlated with water type. These results are compatible with the life-style of these two crocodilians; *C. crocodilus* is a habitat generalist and appears to disperse rapidly to newly available habitats, whereas *M. niger* is a more sedentary habitat specialist. Both species appear to be recovering from unregulated over-harvesting; however, their responses are life-history- and, potentially, ecologically dependent.

Home Range and Habitat Associations of a Bahamian Iguana: Implications for Conservation

The Andros Iguana (*Cyclura cyclura cyclura*) is an endangered lizard threatened by habitat loss, illegal hunting, impacts from historic large-scale logging practices, and predation by feral animals (e.g., cats, dogs, and hogs). Local and national conservation organizations are interested in demarcating protected areas for the iguana in the southern portion of its range. However, no life history information is available. In order to provide



CHUCK KNAPP

Large home-range sizes and associations with open pine forest and shrublands must be considered when establishing protected areas for the Andros Iguana (*Cyclura cyclura cyclura*).

data that can be applied in a science-based management strategy for the Andros Iguana, KNAPP AND OWENS (2005. *Animal Conservation* 8:269–278) investigated seasonal variation in home-range size and habitat selection using

radio telemetry. Home ranges were the largest reported to date for free-ranging *Cyclura* (30.6 ha for males, 5.6 ha for females). Open pine was the only habitat type out of four where iguanas occurred more than expected by chance. However, the pair-wise comparisons of habitat types reveal that iguanas were found significantly closer to open pine and shrubland than to closed pine. Conservation implications of the dynamic seasonal home-range fluctuations and habitat usage are discussed and recommendations are offered for establishing protected areas.

Spatial Ecology of Endangered Grand Cayman Blue Iguanas

West Indian Rock Iguanas (*Cyclura* spp.) are among the most endangered lizards in the world and many populations will need to occupy human-modified habitats to escape extinction. Fewer than 25 Grand Cayman Blue Iguanas (*C. lewisi*) remain in the wild. GOODMAN ET AL. (2005. *Journal of Herpetology* 39:402–408) examined spatial ecology of released, captive-bred iguanas in a botanic park on Grand Cayman. Males used larger areas and moved greater distances than females in the summer but not in the fall and overall male home range sizes were greater than those of females. A few home range estimates were greater than any previously reported for *Cyclura*. Especially males during the



DESIREE WONG

Released, captive-bred male Grand Cayman Blue Iguanas (*Cyclura lewisi*) in a botanic park used larger areas and moved greater distances than females in the summer but not in the fall.

breeding season used areas outside the park, where they are vulnerable to predation, vehicular death, and hunting by humans. Reserves for *C. lewisi* must be large and surrounded by buffer zones or fenced.

Displacement of Native Geckos by Introduced House Geckos

How introduced reptiles cause the loss of endemic reptiles is poorly understood. COLE ET AL. (2005. *Biological Conservation* 125:467–474) investigated the role of the introduced House Gecko (*Hemidactylus frenatus*) in causing a catastrophic decline and extinction of the endemic night gecko (*Nactus* spp.) populations in the Mascarene Islands. Competition for enemy-free space was tested in experimental enclosures and showed that *H. frenatus* displace endemic *Nactus coindemirensis* and *Nactus durrelli* from favored positions in and near refu-

gia, thus increasing the risk of predation and exposure to stochastic events. The ability of *H. frenatus* to grip substrates with their pad-bearing toes was examined, and the data indicated that naturally occurring substrates with a greater amount of loose surface material of a higher particulate concentration and size excludes *H. frenatus*, but not *Nactus*. These findings support the hypothesis that *H. frenatus* led to the fragmentation and extinction of endemic *Nactus* populations and demonstrate that artificial refugia made of a crumbly substrate may be used to limit future disturbances by this gecko and others like it in the Mascarene Islands and elsewhere.



MIY COLE

Introduced House Geckos (*Hemidactylus frenatus*, top left) are displacing endemic Night Geckos (*Nactus coindemirensis*, top right, and *N. durrelli*, bottom) from favored positions in and near refugia in the Mascarene Islands.