

Spatial ecology of the two African Slender-Snouted crocodiles *Mecistops cataphractus* and *M. leptorhynchus*

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Abstract: Despite the high conservation priority of the genus *Mecistops*, and its recent split into two distinct species (*Mecistops cataphractus* and *Mecistops leptorhynchus*), crocodiles of this genus remain the least known crocodylian species in the world. Given the conservation status of these two species (Critically Endangered and Endangered, respectively), gaps in knowledge on their ecology need to be filled to ensure adequate protection. Studies of species movements are vital to understand spatial requirements of individuals. Moreover, space use and ranging patterns can help to understand the social organization of animals through space and time, and can be used to enhance effective management and conservation action. We conducted a telemetry study on 26 *Mecistops cataphractus* and 30 *Mecistops leptorhynchus* in Taï National Park (Côte d'Ivoire) and Loango National Park (Gabon), respectively. We used minimum convex polygon (MCP) methods to determine home range (95% MCP) and core area (50% MCP) size, as well as social interactions. Home range size varied from 5.13 to 1,418 ha and 3.03 to 164.83 ha, respectively for *M. cataphractus* and *M. leptorhynchus*. The two species exhibited approximately the same daily rate of movement (ROM). Mean overall activity levels were up to 90% for both species. Both home range and core area size were greater than those reported for another forest-dwelling crocodile species, *Tomistoma schlegelii*, but smaller compared to other more "typical" crocodylians, like the saltwater crocodile *Crocodylus porosus*, American alligator *Alligator mississippiensis*, and the Nile crocodile *Crocodylus niloticus*. These findings provide a first step towards understanding movement patterns for *M. cataphractus* and *M. leptorhynchus*, and will hopefully help to define management strategies for the species *in-situ* conservation. For *M. cataphractus*, these data will additionally be useful for monitoring post-release success of reintroduced, captive-produced juveniles.

Keywords: Movement patterns, Radio tracking, Genus *Mecistops*, Crocodylians, Africa

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