

Abundance and Ecology of West African Slender-snouted Crocodiles in Unprotected Community Forests in Southern Ghana

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Abstract: The Critically Endangered West African slender-snouted crocodile (*Mecistops cataphractus*) is one of the world's rarest and least studied crocodylians. *M. cataphractus* is a top priority Evolutionarily Distinct and Globally Endangered (EDGE) species. It is threatened by habitat loss, illegal hunting, reduced prey availability, and other anthropogenic-related population declines. Throughout its range, it has been extirpated from most unprotected areas and, where it still occurs, populations have been depleted to the point that even small disturbances will result in localized extinction. The Techiman-Tanoso stretch of the Tano River and the Jimi River in Obuasi, are among the few unprotected locations in West Africa that still holds significant numbers of *M. cataphractus*. For a two-year period (2017-2019), we sought to investigate the abundance, nesting and spatial ecology of *M. cataphractus*. We radio-tagged two adult females and five adult males ranging from 126 to 247cm total length in the Tano River. Crocodile abundance surveys were conducted using nocturnal spotlight surveys and nests were found through visual scanning of the riparian vegetation. The mean Minimum Convex Polygon (MCP) at 95% was 3.88 km², SD±4.45. This average home range is very small compared to what has been reported for other crocodiles. The mean encounter rates were 2.7 individuals/km and 0.69 individuals/km at Tanoso and Obuasi, respectively, making them among the highest recorded for the species throughout its range. These results suggest that Tanoso could be the unprotected area with the highest known concentration of *M. cataphractus*. We found a mean clutch size of 16 eggs per nest (±2; range = 15-25; n=19) which support previous work on this species. Despite the fact that these areas are unprotected, our findings suggest that capitalizing on local community traditional relationships with wildlife could provide a reasonable basis for community-based species conservation for this Critically Endangered species in Ghana.

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