Home range and Long-Range Movements of the Nile Crocodile in Relation to the Anthropogenic pressure, Lake Nasser, Egypt

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Movements of animals determine and reflect home ranges and social interactions, provide insights into resource requirements and habitat usage, and allow to make predictions about individual and population responses to disturbances. The size, location and shape of a home range reflects an animals' behavioural decisions as it searches for food, nesting sites, shelter and mates. Understanding movement behaviour and social structures is seen as prerequisite for effective conservation and management actions, particularly for apex predators with large home ranges because of their influence on lower trophic levels. The Nile crocodile *Crocodylus niloticus* is the second world's largest reptile and the most iconic animal along the Nile. The Nile crocodile inhabits threatened wetlands and it is an important indicator species of environmental conditions. Lake Nasser in Egypt is the largest man-made lake world-wide and contains a large, but decreasing population providing unique opportunities to study their ecology and behaviour under fully free ranging conditions. However, despite its remote location, the crocodiles of Lake Nasser compete with local fishermen. Local crocodile populations become therefore increasingly threatened as many individuals are killed every year, often by local fishermen. Yet, little is known about the behaviour and ecology of Nile crocodile and consequently local conservation programs lack information on the spatial distribution of crocodiles and whether they indeed consume fish in the same areas in which fishermen harvest their fish. Home ranges of Nile crocodiles generally centre around suitable basking sites in winter and expand to include favourable breeding (mating and nesting) and foraging sites in summer. However, these long-range movement are only anecdotally described and without determining factors that could explain these movements, e.g. the anthropogenic pressures in the lake. The aim of this PhD project is thus is to obtain fundamental insights into the distribution and movements of fully free ranging GPS tagged Nile crocodiles by determining their home ranges and long-range movements. In particular, determining seasonal changes in habitat use and movements to and from nesting sites is important to also understand the ecological requirements and to understand where and when crocodiles are exposed to threats by, for instance fishermen or changing water levels that effects the availability of the nesting habitat.