

# **A recent change in crocodile's behaviour in a Mexican Caribbean atoll: possible causes and short-term actions**

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*Abstract:* Banco Chinchorro Biosphere Reserve, an atoll situated 30 km off the southern coast of Quintana Roo state, Mexico, harbors an important population for the conservation of the American crocodile (*Crocodylus acutus*) in the region. During the last 4 years (2016-2019), we observed an increase in human-crocodiles conflicts in the main island of the reserve. As those conflicts include bites to humans (5 cases), we started to collect data to understand the situation, its causes and possible solutions to avoid a reprisal of fishermen towards crocodiles. We first collected data on the incidents (e.g., date, victim sex, age and activity, injuries, crocodile size) by reviewing local press articles, incidents reports and victim interviews. Then, in order to obtain historical data about the relationship between crocodiles and fishermen in the area, we interviewed a former crocodile hunter of the zone. We also reviewed the crocodile hunt bans in the region, the creation date of the reserve and the activities related to crocodiles in the protected area. Furthermore, we analyzed the data collected on the crocodile population and reproduction since 2003 to detect changes in abundance and size of individuals. Based on the results, we hypothesize that the crocodile's behavioral change might be due to the interaction of three main factors: the increase of crocodile size, the feeding of crocodiles by fishermen and the crocodiles conduct reinforcement through stimulation by a touristic activity. In consequence, we propose to carry out the following actions in short-term to prevent future conflicts: stop feeding crocodiles, suspend and review the "swimming with crocodiles" touristic activity for better practice, and apply measures of security and information for users of the protected area. As other factors could be involved, we must also implement a monitoring/study of the crocodiles behavior as the population and individuals continue to recover and grow.

*Keywords:* *Crocodylus acutus*, human activities, human-crocodile conflict, population recovery.

*Type of presentation:* Oral.

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