## HUMAN-CROCODILE CONFLICT IN SRI LANKA: THREATS AND HABITAT VULNERABILITY ANALYSIS

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The increasing frequency of human-crocodile conflicts in Sri Lanka has raised concerns, particularly as human settlements encroach on natural crocodile habitats. The aim of this study is to investigate the patterns and underlying factors contributing to human-crocodile conflicts in Sri Lanka from 2010 to 2024, with a focus on identifying conflict hotspots, evaluating the approximate body size of crocodile in relation to age, habitat characteristics, and proposing strategies for mitigation and coexistence. The study utilized various primary data collection methods to examine human-crocodile conflicts. Field record books provided quantitative data from experts on crocodile encounters, while expert consultations offered qualitative insights into behaviour and conflict patterns. Additionally, media reports from newspapers and online sources captured incidents, enhancing the dataset with both prominent and lesser-known events. The analysis focuses on the two crocodile species native to Sri Lanka; Crocodylus palustris and Crocodylus porosus and evaluates various factors such as incident type, crocodile size, habitat characteristics, and water body types. Results indicate that 17% of all recorded incidents were classified as conflicts, with 65% of these incidents involving direct human-crocodile encounters. Spatial analysis revealed that 40% of conflicts occurred in suburban areas, such as residential outskirts and semi-urban neighbourhoods. Another 40% were documented in urban environments including cities and densely populated regions, while 20% occurred in rural settings, such as villages and croplands. Conflict-prone water bodies included rivers and estuaries, accounting for 46% of the recorded incidents with a notable concentration along the Nilwala River, highlighting it as a conflict hotspot. Lagoons accounted for 28%, while stagnant water bodies were involved in 26% of cases. The approximate size of crocodiles in relation to their age was a critical factor in conflict occurrence, with adult crocodiles ( $\geq 2.5$  m) implicated in 40% of incidents, subadults (1.5–2.5 m) in 50%, and juveniles (<1.5 m) in 10%. The presence of juvenile crocodiles in high-conflict areas suggests that these regions may also serve as breeding habitats, potentially increasing the risk of future conflict. A rise in incidents in post-2015 correlates with habitat loss and human encroachment into crocodile habitats. These findings underscore the importance of developing comprehensive conservation strategies focused on habitat protection, conflict mitigation, and raising public awareness, especially in high-risk areas near rivers and estuaries. Proactive measures, such as safeguarding breeding grounds and implementing community-based monitoring programs, are essential for reducing human-crocodile encounters and fostering peaceful coexistence.

Keywords: Conflict mitigation, Crocodylus palustris, Crocodylus porosus, Habitat management, Human-crocodile conflict.