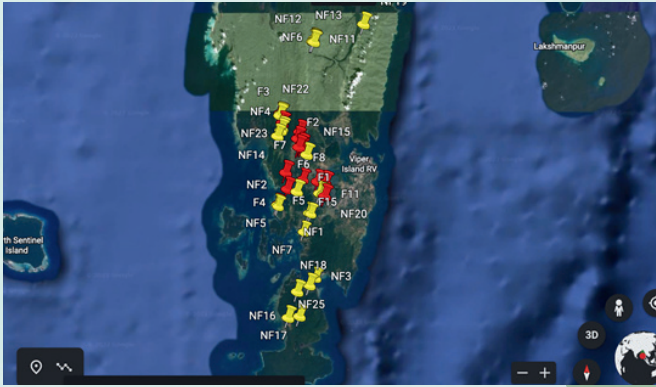




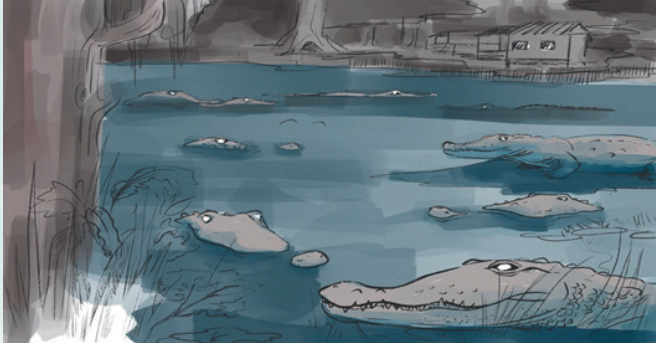
# HUMAN CROCODILE CONFLICT (HCC) IN THE ANDAMAN ISLANDS

## UNDERSTANDING AND PREDICTING RISK FROM CROCODILE ATTACKS

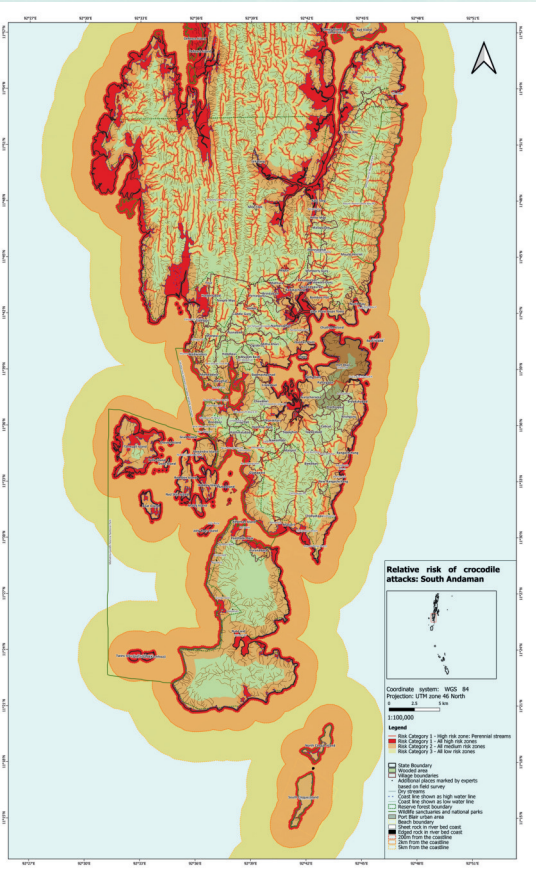
Saltwater crocodile populations are witnessing a resurgence as a result of improved conservation and surveillance measures in the Andaman islands. As an apex, hyper-carnivorous predator, large salties occasionally prey on human beings, resulting in a challenging situation for both people and conservation. Our work in the Andaman islands aims to understand the emerging situation of conflict in mapping and analysing the trends in human fatalities and negative interactions over a period of time, risks associated with habitat use, patterns in survivorship, as well as a better understanding of victimology via in-depth interviews with survivors and key informants.



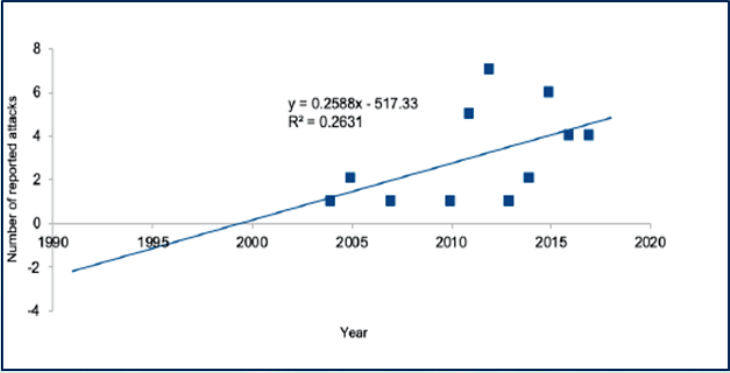
Mapping attacks: recording fatal and significant non-fatal interactions



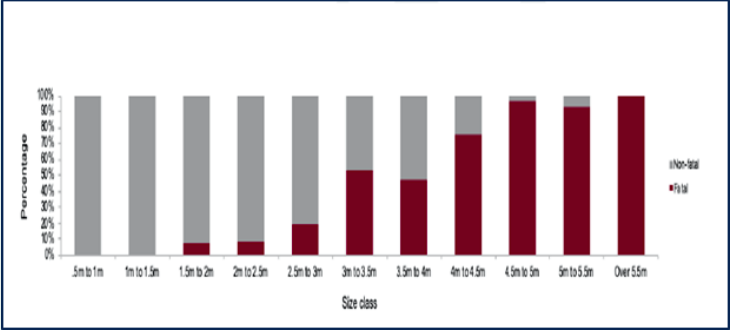
The ecology and psychology of fear



Mapping risk: relative risk of crocodile attacks in S Andaman

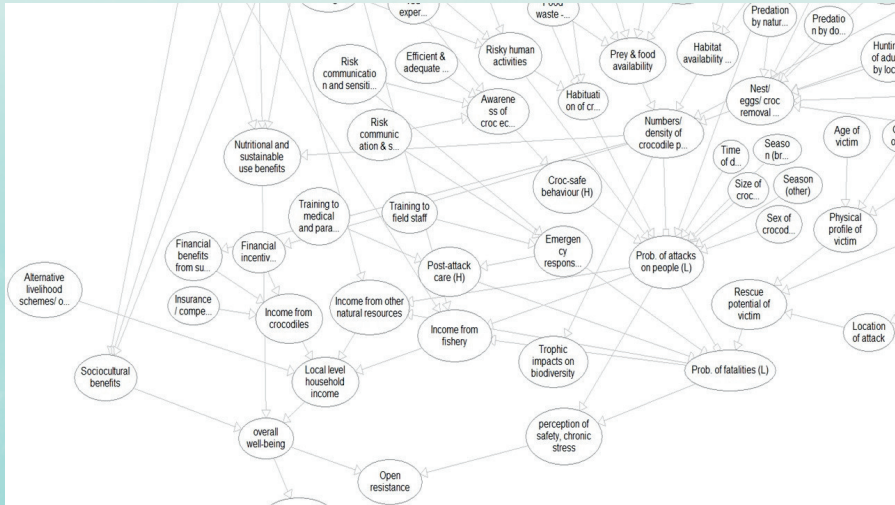


Trends in crocodile attacks: Andaman Islands



Human fatalities and size of crocodiles

Between 2020 and 2025, we have surveyed over 54 settlements in South Andaman, documenting attacks, information on local dynamics and survivor stories. In addition to information on attacks from S Andaman and the Andaman & Nicobar islands as a whole, we augment our data with insights from global databases to analyse the nature of attacks, the risks associated with different occupations and activities, and mapping relative risk in space and time. Our study also ties into a broader, global scale, longue durée examination of the ecology and psychology of human fear in the context of large, dangerous animals over evolutionary time.



Global models



Local models

## MODELING CONFLICT IN TIME AND SPACE

Global models – conflict with wildlife is rarely a standalone issue and is typically linked with a range of other challenges and drivers. For instance, in the Andaman islands, HCC has strong interlinkages with sectors such as the fisheries and tourism sectors, both of which impact local livelihoods to a large extent. This necessitates a whole system view of conflict and an understanding of the strengths and impacts of these interactions at the system level. To take this forward, we are developing order of magnitude models of the system as a whole (using qualitative probabilistic networks), and modeling ‘What if’ scenarios where different causal factors are tweaked.

Local models – Interactions between people and crocodiles can be understood by deploying computational simulations that model the interactions between human and crocodile ‘agents’ distributed within the system. These agent-based models (ABMs) are adept at unraveling the behaviours of complex systems and in understanding emergent outcomes arising from the actions of individual agents. We use ABMs to model the interactions of crocodile and human populations in shared spaces under different management scenarios, as well as use these models to predict levels of conflict over time, to predict demographic outcomes of management measures, climate change, etc.

## GUIDANCE, SAFETY AND BEST PRACTICES

Research outcomes and learnings relating to HCC in the Andaman islands is translated into a range of outputs that are of benefit to management agencies and the wider public. These include information on learnings and best practices from other contexts across the range of the species, guidance on croc safe practices, the potential of management and surveillance tools such as drones, tracking mechanisms, etc.



## TEAM, ADVISORS, COLLABORATORS

Our work on HCC is carried out and supported by a multidisciplinary team drawn from a number of non-governmental and scientific research institutions as well as members of the IUCN’s Sustainable Use and Livelihoods (SULi) and Crocodile Specialist Groups.

