

Survey Paper

Mugger Crocodile (*Crocodylus Palustris*) Status in and Around Kollidam River at Anaikarai, Tamil Nadu, Southern India

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Abstract— In Anaikarai, Kumbakonam, Tamil Nadu, India, a survey was conducted to examine the population gauge and spatial dispersion of mugger crocodiles in the Kollidam Cauvery stream. The study period was from January 2021 to 2022. A total of 68 individuals were housed over a 25 km stretch of the Cauvery Waterway in Anaikarai's neighbouring communities. A total of 40 (59%) people were observed on the stream bed and on the rocks, while 28 (41%) were observed floating in the water near crocodiles. Here, I don't have many great suggestions for crocodile preservation over the long term. The present study offers ideas and a strategy for the extended mugger protection in the region.

Keywords— Crocodile, Conservation management, Cauvery River, Population

1. Introduction

One of the most populated species on the world, the mugger crocodile (*Crocodylus palustris*), has been estimated to be over 200 million years old, suggesting that crocodiles have existed since the time of the dinosaurs. The Indian Mugger crocodile is one of the most dangerous types of freshwater crocodiles. In the past, crocodilians were common in many tropical seas across the world. The ascent pursued for crocodile calfskin over the world, notably in the European countries, went hand in hand with the unsafe degrees of deception. Every time, crocodiles were slaughtered in violation of the law to create belts, shoes, purses, and wallets. Trackers turned to more damaging methods as curiosity grew. Using powerful weapons, spotlights, and motor boats, covert trackers have brought a number of species close to extinction. In various areas of India, muggers are common and are reported in the northern 12 states. The number of muggers is eventually estimated to be around 4,500 in the wild, excluding 5000+ in servitude. [2] Just seven species could be found in India during the Pre-Notable era, and that number has now dropped to Hunting and environmental destruction significantly reduced the Mugger population. Currently, just three species are necessary: the crocodile that mugs, the estuary (coastal) crocodile, and the gharial (*Gavialis gangeticus*).

Mugger crocodiles (*Crocodylus palustris*), are a boundless animal varieties, enveloping the 70 to 90Th equals. They happen in confined and common totals all through their conveyance in India, Sri Lanka, Nepal and Iran. Living space

subject matter experts, they happen in little streams, Waterways, artificial lakes, and dams may be found everywhere they go. In Bhutan and Myanmar, the mugger has been eradicated from the wild, and in Bangladesh, it is likely to be put to death.[1].

Under the auspices of the UNDP/FAO Crocodile Reproducing and The Board Task, protection efforts for the species recovery in the state were launched in 1976. In the middle of the 1980s, Mugger crocodiles were once again introduced to the state's different districts. 150 *C. palustris* were distributed in this protected area in 1985 at 10 different locations. In Tamil Nadu, a total of 372 animals have been reintroduced in six different locations by 1986. This species is included in Timetable I of the Indian Untamed Life (Security) Act of 1972 and has the most notable legal security in India. It is classed as weak on the "IUCN Red List (2016) of Compromised Species." [3]. In this note, we discuss the Mugger crocodile's present population status and basking habits in Tamil Nadu, Southern India's Anaikarai Cauvery River.

2. Materials Method

1. Study area

A town panchayat named Anaikarai (11.140093°N 79.452653°E) is located in the Tanjavur area of Tamil Nadu, India's Thiruvudaimarudur Taluk (Figure 2). There are two important extensions that Anaikarai is connected to. Nearly a km long on either side. It is an island located in the Cauvery Stream's basin. It is located 25 kilometres from Kumbakonam

and 260 kilometres from Chennai. The Lower Anaicut, an important distributary of the Cauvery that Sir Arthur Cotton tried to span in the nineteenth century, is thought to be a replica of the Kallanai plan. In Anaikarai, over 2000 households are mostly supported by farming and fishing. It is noteworthy and a haven for river fishes.

Mugger Crocodiles (*Crocodylus palustris*) scenario in Tamil Nadu.

465 Mugger crocodiles have been found in Tamil Nadu, in a variety of rivers and dams.

3. Methodology

A few field personnel are visited throughout the early morning (0900 hrs to 1300 hrs) and evening (1500 hrs to 1800 hrs) of the day, and information is recorded by strolling along the streamside. The creek was said to be cut across, and there were mugger crocodiles to be seen on both sides of the river. Mugger sightings and indirect evidence (scat, imprints, body and tail engraving) were used to confirm its presence, and populations were estimated by direct locating. Additionally seen was luxuriant behaviour such as seasons of constantly lolling on surfaces (water surface, stone, stream bed). Outwardly, mugger crocodiles were divided into three size categories: adults above 2 metres, subadults under 2 metres, and juveniles under 1 metre.



Figure 1. Mugger crocodile (*Crocodylus palustris*).



Figure 2. Study area at anaikarai, Tamil Nadu.

Threats to crocodilians

Crocodilians are undermined by numerous human exercises. First and the most huge among these is the obliteration or change of wild natural surroundings. Before, business overexploitation and aimless killing have brought about numerous species experiencing exceptional decreases in numbers and decreases in circulation, however no species has become wiped out on account of direct human abuse. Nonetheless, overexploitation joined with extreme environment misfortune have carried a few animal varieties really close to elimination.

Crocodilians of all species rely on wetland living spaces. Various species have changing inclinations and prerequisites and crocodilians have adjusted to most accessible tropical and subtropical wetland types (bogs, mangroves, waterways, lakes, tidal ponds and soon.). Since they are very enormous creatures and in light of the fact that crocodiles increment through a few significant degrees of size as they develop from hatchling to grown-up, they require areas of territory that are both huge and various. A couple of animal categories are versatile and can continue in little areas of upset environment, for instance the normal caiman and Chinese gator. In any case, most species require generally enormous regions (many square kilometers) of undisturbed wetland to keep up with huge populaces.

4. Results

A total of 68 individuals were recorded in a 25km Cauvery River stretch of nearby villages of Anaikarai (Figure 1). A maximum of three individuals while a minimum of a single individual were noted. A total of 37 (46%) crocodiles were observed floating in the water; however, 44 (54%) were observed resting on the rocks and riverbed. [7]. According to statistics on size classes, there were 45 adults (1.87 ± 0.79), 28 subadults (1.16 ± 0.63), and eight youngsters (0.33 ± 0.76). Juveniles were spotted between July and August. A total of 53 basking behaviours were observed, with rocks accounting for the majority (53%) of the basking substrates, followed by river beds (30%) and water's surface (17%). Between 0900 and 1100 hours, when 53% of the crocodiles basked regularly, basking behaviour decreased. [8].

Discussions

Crocodylians have a few exceptional parts of normal history that make unique difficulties for their preservation. They are the biggest hunters in their natural surroundings and can compromise people and their domesticated animals. Numerous species are taken advantage of for their important skin, which upholds a worldwide exchange worth more than US \$ 500 million yearly. They are additionally intensely impacted by natural surroundings misfortune and the contamination of amphibian territories. Any crocodylian species loss would result in a significant loss of biodiversity, economic opportunity, and biological system stability.

Since most recent twenty years, it has been seen that this little mugger populace is duplicating because of the support of few females in rearing and customary enlistments by fruitful hatchlings, in a few far off region of the waterway. Likewise, it was seen that during stormy season, a couple of crocodiles go into human settlements through the overwhelmed water seepages and make alarm in the city [2].

A total of 68 individuals were counted during the current survey in 47 sightings along the 25-kilometer Anaikarai Cauvery River. There are more adults in this population and a wider range of sizes, which suggests that the mugger breeding population in this river system is healthy[5]. [9] stated that the species reproduces between June and September, and that's why adolescents were more frequently observed between June and September. Some factors, including as climatic conditions, social interactions, circadian rhythms, and regenerative state, have an affect on how warmly crocodiles behave. These factors have been studied using just luxuriating substrate and time span data. [6].

Consequently, a nitty gritty review is expected to figure out the conveying limit of the Sarovar, size of populace and other substitute water body for these creatures. The time has finally come to plan an activity plan for the species, to assess our natural life protection methodology and yet again form approaches.

5. Conclusion

Crocodylus porosus is the biggest and one of the most remarkable and shrewd reptile species living today. Crocodiles, in general, have existed on earth for a long period of time, exhibiting that their exceptional physiology and hunting skills have made them extremely fruitful at enduring changing ecological circumstances after some time. Their significance to biodiversity lies in the key job that they play as hunters at the head of the established pecking order. The saltwater crocodile is a genuine hunter, which is the reason it might once in a while represent an endanger to living souls.

Recommendations

Since around 1970, after acknowledgment that the uncontrolled abuse of prior many years had caused serious decays, numerous species have benefited tremendously from the organization of further developed insurance and firmly controlled double-dealing. Here, I have not many significant ideas for long haul protection of crocodile,

1. The mugger populace of Anaikarai river ought to be checked, consistently.
2. Every 5 - 7 years, a mugger overview to be done in the whole waterway framework.
3. Find homes and shift the eggs for fake hatching to control the populace.
4. Prevent encroachments on the river bank.
5. A different water body should be used for the discharge of rescued muggers after they have been individually marked.
6. Famous or guilty party huge estimated muggers ought to be kept in hostage offices zoos.
7. Start a campaign to raise awareness of the need of protecting muggers
8. Design new action plan at state levels on mugger crocodile.
9. Create a new state-level action plan to combat the mugger crocodile..
10. A good level of cooperation between the state's forest division, and different NGOs, Zoos and nearby natural life devotees is expected as a go between.

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