



Crocodile: Conservation and Threats

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Crocodiles are large, semi-aquatic reptiles inhabiting tropical regions across Africa, Asia, the Americas, and Australia. Of the 23 recognized species, seven are listed as Critically Endangered, four as Vulnerable, and 12 as Least Concern according to the IUCN Red List (Martin, 2008).

India is home to three crocodile species: the Saltwater Crocodile (*Crocodylus porosus*), the Mugger or Marsh Crocodile (*Crocodylus palustris*), and the Gharial (*Gavialis gangeticus*), each with varying conservation statuses—Least Concern, Vulnerable, and Critically Endangered, respectively.

A crocodile census conducted in January 2020 in Odisha's Bhitarkanika National Park revealed 1,757 crocodiles, up from 1,742 the previous year. This count included various life stages, from hatchlings to adults, and also documented 12 rare albino crocodiles and four over 20 feet long.

Indian Crocodile Species

1. Saltwater Crocodile (*Crocodylus porosus*)

Also known as Estuarine Crocodiles, these are the largest crocodile species, with some individuals reportedly reaching 8–10 meters in length. Their habitat includes the northeastern Indian coastline and the Andaman Islands, particularly in Bhitarkanika Wildlife Sanctuary, where reintroduction programs have successfully released over 2,300 captive-reared juveniles between 1977 and 2009.

Key Features:

- Adults exhibit a dark coloration with lighter bands, while juveniles are pale tan with dark stripes.
- Renowned for their ambush predation techniques, they dominate their aquatic territories.

Threats:

- Hunting for skin and reputation as man-eaters.
- Habitat destruction and loss of nesting sites.

2. Mugger Crocodile (*Crocodylus palustris*)

Primarily found in the Indian subcontinent, the Mugger inhabits freshwater ecosystems such as rivers, marshes, and canals. Medium-sized, they can grow up to 5 meters and are known for digging burrows to escape extreme temperatures.

Population

Status:

With an estimated wild population of 3,000–5,000 adults, Muggers are distributed across more than ten Indian states. Gujarat's Ghodahada Reservoir and Vadodara city are notable habitats.

Threats:

- Habitat fragmentation due to agriculture and urbanization.
- Exploitation for medicinal purposes and fishing activities.

3. Gharial (*Gavialis gangeticus*)

Known for its long, slender snout and fish-eating habits, the Gharial is the longest-living crocodilian. Once common across the Indian subcontinent's river systems, its range has declined to just 2% of its historic distribution.

Conservation Highlights:

- Recovery initiatives have increased the Chambal River population to 1,255 individuals as of recent surveys.
- Found primarily in sanctuaries like the Chambal, Son River, and Katarniaghat.

Threats:

- Habitat degradation due to dams and sand mining.
- Hunting for eggs and body parts for traditional medicine.

Emerging Threats to Crocodile Populations

1. Habitat Loss and Degradation

Expanding agriculture, urbanization, and industrial activities have led to the destruction of wetlands—critical habitats for crocodiles. These areas are often misused for mining or deemed wastelands.

2. Human-Wildlife Conflicts

With shrinking natural habitats, crocodiles increasingly encroach upon human settlements. This has led to notable conflict zones such as Bhitarkanika in Odisha and Vadodara in Gujarat. Over 64 Mugger attacks have been reported in Gujarat over the past five decades, underscoring the need for effective management strategies.

3. Roads and Railways

India's expanding transport network disrupts crocodile habitats, with incidents of vehicle collisions rising. Between 2005 and 2018, Gujarat alone reported 38 crocodile deaths due to transport infrastructure.

Conservation Strategies

1. Habitat Protection

- Establishing conservation reserves, such as the 140-km stretch of the Gandak River, ensures safe habitats for crocodiles and other aquatic species.
- Restoring degraded wetlands to support biodiversity.

2. Breeding Programs

Since 1975, captive breeding initiatives in Bhitarkanika have been instrumental in repopulating crocodiles, showcasing the potential of such interventions.

3. Community Awareness and Education

Educating local populations about coexistence with crocodiles can mitigate conflicts. Providing alternative livelihoods can reduce dependence on activities that endanger crocodile populations.

4. Legislation and Enforcement

Crocodiles are protected under Schedule I of India's Wildlife Protection Act, 1972, ensuring stringent penalties for poaching. Their inclusion in Appendix I of CITES regulates international trade to prevent exploitation.

Conclusion

Crocodiles are both iconic predators and vital components of aquatic ecosystems, maintaining ecological balance. However, they face mounting threats from habitat destruction, human-wildlife conflicts, and climate change. Comprehensive conservation measures—combining habitat protection, captive breeding, community involvement, and legislative support—are essential to secure their future. India's success stories, such as the increasing gharial population

in Chambal, highlight the impact of dedicated efforts and provide a roadmap for preserving these ancient reptiles.

Reference:

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