

Saltwater Crocodile Population Recovery in Sundarbans

Overview

- **Species:** *Crocodylus porosus*, the largest reptile among crocodilians.
- **Authority:** West Bengal Forest Department conducted the study.
- **Region:** Sundarbans Biosphere Reserve (SBR).
- **Ecological Role:** Apex hypercarnivores and scavengers that feed on carcasses, maintaining ecosystem balance.
- **Habitat Range:** Mangroves of Odisha and West Bengal, coastal stretches of Andaman & Nicobar Islands.
- **Relevance:** GS 3 (Environment & Ecology).

Population Study (2025)

- **Direct Sightings:** 213 individuals observed.
- **Demographics:** 125 adults (58.7%), 88 juveniles (41.3%), 23 hatchlings (10.8%).
- **Population Estimate:** Between 220–242.
- **Encounter Rate:** One crocodile per 5.5 km (0.18/km).

Year-on-Year Growth (2024–25)

- Adults: 71 → 125 (76% rise).
- Juveniles: 41 → 88 (115% increase).
- Hatchlings: 2 → 23 (1,050% surge).
- Overall population doubled from 114 → 236 (107%).

Significance

- **Hatchling boom** is most notable as sightings in Sundarbans are rare.
- Balanced growth across age groups ensures long-term viability.
- Sharp hatchling increase indicates effective nesting site protection.

Methodology

- Surveys conducted systematically with GPS mapping and habitat analysis.
- Population classified by body length.
- Only confirmed sightings included, ensuring conservative estimates.
- Challenges included dense mangroves, elusive behavior, and tidal changes.

Conservation Journey

- **Bhagabatpur Crocodile Project (since 1976):** Located in South 24 Parganas; nearly five decades of continuous conservation through captive breeding and habitat security.

- **Impact:** Consistent monitoring, adaptive management, and reserve protection have ensured long-term success.

Ecological Importance

- Healthy crocodile numbers indicate ecosystem stability.
- Help regulate prey populations, maintain biodiversity, and clean water bodies by consuming carcasses.
- Demonstrates success of mangrove protection.

Current Challenges & Priorities

- **Threats:** Climate change (sea-level rise, salinity shifts), fishing pressure, habitat loss, human-crocodile conflict.
- **Priorities:** Continuous monitoring, safeguarding nesting sites, habitat enrichment, and involving local communities in conservation.

Broader Impact

- **National:** Serves as a model of successful long-term conservation policy.
- **Global:** Highlights rare success in apex predator recovery within the world's largest mangrove ecosystem, providing lessons for climate resilience and biodiversity conservation.

Success Drivers

- Decades-long government commitment.
- Scientific, research-driven management.
- Protected habitats within Sundarbans reserve.
- Captive breeding supplementing wild populations.
- Consistent annual surveys ensuring evidence-based decision-making.

Saltwater Crocodile Recovery in Sundarbans

- *Species:* *Crocodylus porosus*, the world's largest living reptile.
- *Authority:* West Bengal Forest Department.
- *Habitat:* Sundarbans Biosphere Reserve (SBR).
- *Ecological role:* Apex hypercarnivore, scavenger maintaining ecosystem health.
- *Distribution:* Odisha and West Bengal mangroves, Andaman & Nicobar coasts.
- *Relevance:* GS-3 (Environment and Ecology).

Population Assessment (2025)

Surveys recorded 213 direct sightings, estimating 220–242 individuals. Demographics included 125 adults (58.7%), 88 juveniles (41.3%), and 23 hatchlings (10.8%). Encounter rate was one crocodile every 5.5 km (0.18/km). Comparison with 2024 shows remarkable growth: adults rose from 71→125 (76%), juveniles 41→88 (115%), hatchlings 2→23

(1,050%), and total 114→236 (107%). The hatchling surge, rare in Sundarbans' terrain, signals breeding success and sustainable population recovery across age groups.

Survey Method

Systematic sampling with GPS mapping and habitat profiling, using length-based classification. Only direct sightings counted, ensuring conservative estimates. Major challenges: dense mangroves, cryptic behavior, tidal variations.

Conservation History

Since 1976, the *Bhagabatpur Crocodile Project* in South 24 Parganas has bred and protected crocodiles for nearly five decades. Governments consistently supported captive breeding, habitat protection, and annual monitoring.

Significance

Recovery of an apex predator reflects ecosystem stability, biodiversity balance, water cleanliness, and mangrove preservation. The case demonstrates the effectiveness of long-term, research-based management and large-scale habitat protection.

Challenges & Priorities

Threats include climate change, sea-level rise, salinity changes, fishing pressure, pollution, and mangrove loss. Priorities: consistent monitoring, nesting site protection, prey and water quality maintenance, and community conflict-resolution programs.

Broader Impact

The project highlights India's conservation leadership, policy continuity, and replicable methodology. Globally, it represents rare apex predator recovery in the largest mangrove ecosystem, strengthening climate resilience. Key success factors: 49 years of effort, science-driven monitoring, large reserve security, captive breeding support, and systematic surveys.

Karnataka's Gig Workers' Welfare Bill (2025)

Karnataka became the first state to enact a full-fledged law for gig worker rights, covering 4 lakh workers under the *Karnataka Platform-Based Gig Workers (Social Security and Welfare) Bill, 2025*. The bill aims at social protection, welfare schemes, and regulation of aggregator platforms. *Relevance:* GS-2 (Social Issues, Labour Laws).

- *Financial Model:* A 1–5% welfare fee on worker payouts, plus contributions from workers, state/central aid. Many workers earn just ₹1,800 for 16-hour days.
- *Institutional Setup:* A Welfare Board will register workers and platforms, manage disputes, and operate a dedicated social security fund. Registration is mandatory.
- *Scale:* Of 4 lakh workers in Karnataka, only 10,500 are registered. NITI Aayog projects 23.5 million gig workers nationally by 2030.
- *Focus Areas:* Health risks from two-wheeler work, income instability, unsafe conditions, and lack of benefits.
- *Platform Obligations:* Registration, fee compliance, ensuring scheme participation, reporting standards.
- *Challenges:* Enforcement, worker awareness, fee monitoring, interstate workers.

- *Implications:* Sets a national precedent, may reshape aggregator models, formalizes informal work, and could inspire other states.

AI Adoption in India's Workforce

Workers now see AI as opportunity, not threat. 43% feel confident about AI use; 20% of blue-collar workers already apply generative AI. Mid-career professionals (35–54 yrs) show highest confidence (49%). Yet institutional training lags behind enthusiasm. *Relevance:* GS-3 (Technology, Employment).

- *Governance:* 56% mid-career professionals demand better training, exposing skilling gaps. Risk of digital divide grows. Traditional job categories blur.
- *Challenges:* 70% find AI helpful, but only 20% use it due to weak infrastructure. Training mostly self-paced (29%). Rural and informal workers risk exclusion.
- *Economic Impacts:* AI raises productivity, wages for skilled workers, and blurs sectoral boundaries. India's mid-career population adapts effectively.
- *Social Aspects:* Older workers adapting better than "digital natives"; access barriers may deepen inequality. AI boosts dignity of blue-collar jobs.
- *Strategic Value:* Enhances competitiveness, self-reliance, and global standing. Supports post-pandemic recovery, industry growth, and start-up culture.
- *Future Needs:* Ethical guidelines, investment in training and connectivity, rapid policy adaptation, and inclusive growth.

India–China Relations: Breaking the Wall

Recent signals include Rajnath Singh's meeting with China's Admiral Dong Jun (SCO summit), resumption of Kailash Manasarovar Yatra, Wang Yi's India visit, and 75 years of ties. *Relevance:* GS-2 (International Relations).

- *History:* Ancient ties rooted in Nalanda learning, Buddhist exchanges, and shared intellectual traditions.
- *Current Issues:* Restricted academic exchanges, stalled trade, recurring border clashes, bureaucratic barriers.
- *Mutual Learning:* India offers lessons in democracy and digital frameworks; China offers insights in food security and grassroots development.
- *Limitations:* Strategic mistrust, crisis-driven diplomacy, and paranoia hinder engagement.
- *Nalanda Approach:* Engage flexibly, maintain dialogue despite differences, prioritize intellectual openness, and foster people-to-people ties.
- *Steps:* Build China studies programs, simplify exchanges, promote Track-II diplomacy, and cooperate in health and climate change.
- *Values:* Knowledge, education, and shared civilizational responsibility should shape diplomacy.

India's Stunting Crisis

POSHAN Abhiyaan targeted 25% stunting by 2022, but 2025 levels remain at 37% (vs. 38.4% in 2016). Progress of only 1.4% in seven years highlights deep systemic issues.

Relevance: GS-2 (Health, Governance).

- *Causes:* Poor maternal health, teenage pregnancies, low female education, dietary inadequacies (protein and micronutrient gaps), and widespread anemia (57% women, 67% children).
- *Feeding Issues:* Rising C-sections, colostrum loss, weak maternity leave for informal workers, only 64% exclusive breastfeeding.
- *Sanitation:* 19% still defecate in open; unsafe water disrupts nutrition absorption.
- *Socioeconomic Roots:* Poverty, intergenerational malnutrition, caste/community disparities.
- *Healthcare Gaps:* Weak antenatal care, poor counseling, NICU separation, inadequate follow-up.
- *Recommendations:* Improve maternal education, prevent adolescent pregnancies, diversify diets, extend maternity leave, enhance sanitation, and strengthen healthcare.
- *Impacts:* Permanent economic loss, healthcare burdens, weaker demographic dividend, and damaged international image.

India–U.S. Trade: Youth as Strength

With Trump-era tariffs, U.S. levied 50% on Indian goods (plus 25% penalty linked to Russian oil). Indian textiles, priced \$15, lose out to cheaper competitors. China negotiated relief, India did not. *Relevance:* GS-2 (International Relations), GS-3 (Economy).

- *Challenges:* India's trade deficit grows, export sectors lose jobs, U.S. pressures India to open agri/dairy markets, export share remains small.
- *Youth Advantage:* India has world's largest youth population, 120m in higher education, diaspora shaping U.S. innovation. Aging rivals lack this edge.
- *Policy Options:* Challenge tariffs at WTO, diversify exports, use consumer market as leverage, deepen South–South ties. Domestically, boost consumption, innovation, skilling, infrastructure.
- *Youth Strategy:* Invest in education, start-ups, diaspora ties, job creation.
- *Future:* Tariffs hurt short-term, but youth-driven domestic demand and innovation can reposition India globally.

The Derozio Effect (1820s–40s Calcutta)

Henry Louis Vivian Derozio (1809–1831), poet and teacher at Hindu College, inspired rationalism, nationalism, and social reform. *Relevance:* GS-1 (Modern History).

- *Contributions:* Poetry on freedom and dignity; promoted rational thought and women's rights.
 - *Young Bengal Movement:* Debated caste, religion, and social conservatism; supported widow remarriage, female education, inter-caste dining.
 - *Political Legacy:* Bengal British India Society (1843) — first Indian political party. Advocated press freedom, rights, and reforms.
 - *Figures:* Radhanath Sikdar calculated Everest's height, challenged colonial injustice.
 - *Impact:* Introduced radical critique of orthodoxy and colonialism, inspired later reformers like Vidyasagar.
 - *Limits:* Elitist, Calcutta-centric, short-lived after Derozio's death.
 - *Legacy:* First radical intellectual movement in India; precursor to constitutional values of equality and secularism.
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Ban on Real Money Gaming (RMG) Bill, 2025

The Centre approved a nationwide ban under the *Promotion and Regulation of Online Gaming Bill, 2025*. *Relevance:* GS-2 (Governance, Social Issues).

- *Scope:* Outlaws all money-stake online games, including fantasy sports, poker, rummy.
 - *Concerns:* Addiction, financial exploitation, money laundering.
 - *Pros:* Protects vulnerable users, ensures uniformity, reduces litigation.
 - *Cons:* Hurts billion-dollar industry, jobs, and IPL-linked fantasy platforms; risks underground markets; legal challenges expected.
 - *Global Context:* India aligns closer to prohibition (like China) than regulation (EU/US).
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Constitution (130th Amendment) Bill, 2025

Proposed by Home Minister Amit Shah, the Bill disqualifies any Union/State minister detained over 30 days for serious offences (≥ 5 years imprisonment). Amends Article 75. *Relevance:* GS-2 (Polity, Constitution).

- *Current Law:* Ministers serve at President/Governor's pleasure, removed only after conviction.
- *Impact:* Introduces automatic removal after detention.
- *Trigger:* Tamil Nadu minister Senthil Balaji's 2023 arrest exposed grey area.
- *Pros:* Strengthens accountability, aligns with SC's ethics observations.
- *Cons:* May violate presumption of innocence, risk political misuse, and spark Centre–State tensions. Likely Supreme Court test.
- *Comparative:* UK/US ministers resign under allegations; India codifies disqualification through amendment.

Africa's Objection to Mercator Projection

Earth is spherical, so any flat map distorts properties. Mercator (1569), a cylindrical projection, preserves direction but exaggerates areas near poles (e.g., makes Europe/North America larger, shrinks Africa). Equal-area projections (like Peters or Equal Earth) give fairer representation. African critics argue Mercator sustains Eurocentric biases, underplaying Africa's true size and significance.

21st August 2025: Daily MCQs

1. Question

Which of the following duties were added to the Constitution by the 42nd Amendment Act, 1976?

1. To cherish and follow the noble ideals of the freedom struggle
2. To safeguard public property
3. To develop scientific temper
4. To vote in elections

How many are part of the Fundamental Duties?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Correct Answer: (c)

Explanation:

- 1, 2 & 3 are in Article 51A (inserted by 42nd Amendment).
- Voting is a legal right, not a Fundamental Duty.

2. Question

Consider the following statements about the relationship between Fundamental Rights and DPSPs:

1. Fundamental Rights override DPSPs in case of conflict.
2. DPSPs can be used to amend or limit Fundamental Rights.
3. Courts have upheld the need to harmonise both.

How many statements are correct?

- (a) Only one
- (b) Only two

(c) All three

(d) None

Correct Answer: (b)

Explanation:

- 1 & 3: Correct. Fundamental Rights prevail, but courts (Minerva Mills case) emphasized harmonious construction.
- 2: Incorrect. DPSPs cannot override Fundamental Rights.

3. Question

The phrase “Justice – social, economic and political” in the Preamble is directly linked to which part of the Constitution?

- (a) Part II – Citizenship
- (b) Part III – Fundamental Rights
- (c) Part IV – Directive Principles of State Policy
- (d) Part IVA – Fundamental Duties

Correct Answer: (c)

Explanation:

- DPSPs (Part IV) are aimed at achieving justice in social, economic, and political dimensions as envisaged in the Preamble.

4. Question

Which of the following Fundamental Duties were added by the 86th Constitutional Amendment Act, 2002?

- (a) To respect the Constitution
- (b) To provide opportunities for education to children
- (c) To preserve rich heritage of Indian culture
- (d) To safeguard the public property

Correct Answer: (b)

Explanation:

- The 86th Amendment added a new duty: To provide education opportunities to children aged 6–14, corresponding to Article 21A.

5. Question

The idea of the Directive Principles of State Policy in the Indian Constitution has been borrowed from:

- (a) Irish Constitution
- (b) British Constitution
- (c) American Constitution
- (d) French Constitution

Correct Answer: (a)

Explanation:

- DPSPs are inspired by the Irish Constitution, reflecting its goals of socio-economic justice.

