DAILY CURRENT AFFAIRS

22st May 2025

Topics Covered

- **Development without the savaging of urban biodiversity**
- **Overfishing-the threat to ocean wealth, livelihoods**
- **Stories from the heart**
- **Lion count grows by 32% in 5 years**
- **Navy recreates stitched ship based on 5th century Ajanta Paintings**

Development without the savaging of urban biodiversity

Syllabus

- **GS Paper 3** – Environment and Ecology: Urban Biodiversity, Sustainable Development
- **GS Paper 1** – Geography: Urbanisation and associated issues

Development without the savaging of urban biodiversity

Biodiversity, which refers to the variety and the variability of living organisms on this earth – and fundamental to human well-being, a healthy planet, and economic prosperity for all– is under peril. About 25% of species are facing the threat of extinction.

The theme for International Day for Biological Diversity this year (observed annually on May 22) is "Harmony with nature and sustainable development". The date 'commemorates the adoption of the text of the Convention on Biological Diversity (CBD) on May 22, 1992'. The Kunming-Montreal Global Biodiversity Framework (GBF) was also developed by the CBD with four goals as well as 23 targets to conserve global biodiversity (conserve and manage 30% of terrestrial and marine biodiversity) by 2030. Target 12 of the GBF lays emphasis on enhancing green and blue spaces in cities and urban planning for human well-being and biodiversity conservation. Goal 11 of the United Nations Sustainable Development Goal also states the importance of making cities and human settlements safe, resilient and sustainable. But, still, urban biodiversity is under great threat with unplanned development and human greed.

Green space in urban sprawls
Almost half the world's population lives in urban areas, a percentage that is expected to rise to 70% by 2050. City spaces are of premium value and face competing demands. In such a situation, do we have space for greenery? The answer is yes if you consider the range of benefits urban biodiversity offers.

First, health benefits. Urban trees provide provisional services such as food, fibre and water, minimise the urban heat island effect (a much discussed topic) and help in flood control. They help in temperature control, pollution abatement, water conservation and carbon sequestration, and keeping carbon dust and suspended particulate matter in check. Tree lines of a 10 metre width can reduce noise pollution by 5 decibels. In Frankfurt, green belts were shown to reduce the temperature by 3.5° C and increase the relative humidity by 5% when compared to the city centre. Green spaces also provide much needed recreational and spiritual services in the form of parks in what would otherwise be concrete jungles.

Second, economic benefits. Theodore Endreny, Professor of Water Resources and Ecological Engineering, State University of New York College of Environmental Science and Forestry estimated the value of annual services provided by mega city trees to be around $9,67,000 (₹8 crore) per square kilometre of tree cover. Therefore, protecting existing greenery, pursuing the development of parks and new urban green spaces, establishing tree avenues along the roads, and conserving natural rivers

S. Balaji, IFS
is presently Co-Chairman, Access and Benefit Sharing Committee of the National Biodiversity Authority, Chennai, and former Principal Chief Conservator of Forests, Government of Tamil Nadu

City managers must mainstream biodiversity considerations in decision making, and make conservation a mass movement in cities

and water bodies should be undertaken. The key element of developing green infrastructure is promoting community health and well-being.

In its latest report, the Forest Survey of India has estimated the average forest cover in leading urban cities to be only 10.26% of their geographical area (Mumbai 25.43%; New Delhi and Hyderabad 12.6%, Bengaluru, Chennai and Ahmedabad 6.85%, 4.66% and 3.27%, respectively). Chennai and Hyderabad have lost 2.6 and 1.6 square kilometres of forest cover between the 2021 and 2023 assessments.

The GBF gives a framework to urban planners for biodiversity conservation in cities by protecting blue and green spaces and developing new ones. It suggests enhancing native biodiversity, ecological connectivity and improving human health and well-being.

In this context, the UN Habitat's 3·30·300 prescription is relevant. The principle is: Every home, workplace, or school should have a view of at least three established trees. Neighbourhoods should have a minimum of 30% tree canopy cover and a public green space of at least 0.5 to 1.0 hectares, should be accessible within a 300-metre walk or bike ride from every home.

City biodiversity index
A city biodiversity index is prepared based on the present status of the city in terms of three large parameters – the extent of native biodiversity in the city, ecosystem services provided by them and the level of governance of biodiversity. The International Council for Local Environmental Initiative (ICLEI) Asia has prepared a city biodiversity index using 23 indicators for cities such as Kochi, Gangtok and Nagpur. Once the current biodiversity status of the city is assessed through a survey, a local biodiversity strategy and action plan (LBSAP) is prepared to improve the status of the city in terms of biodiversity conservation and sustainable human welfare.

Urban areas have the resilience to support biodiversity if there is an enabling environment. Local biodiversity could be augmented while undertaking plantations in cities. In Chennai, the greening of the Chennai Koyambedu market in 2021 (undertaken by the Care Earth Trust with the financial support of Chennai Metropolitan Development Authority) helped in the natural regeneration of 141 species of higher plants belonging to 39 families and 106 genera within two years. The site also attracted 35 bird and 27 butterfly species that are considered bioindicators of biological diversity. The Koyambedu model mimics a three-storied natural forest which would be better than the Miyawaki model to enhance native biodiversity in small parcels of land available in cities.

The Care Earth Trust prepared a strategy and action plan in 2018 for the Greater Chennai Corporation (GCC) to plant one million native trees in Chennai city over five years. The sprawling Madras Race Club land at Guindy is being transformed into a lake for augmenting groundwater recharge. However, urban development and encroachment has swallowed up many waterbodies in and around Chennai and Bengaluru. The crucial Pallikaranai marsh in Chennai which was once considered a wasteland and garbage dump has been partly restored and declared as a reserved forest (Ramsar site). Most urban waterbodies are losing their ecological integrity due to garbage and sewage pollution. They must be ecologically restored after preventing garbage dumping and treating sewage through conventional treatment or nature-based solutions. Ensuring legal protection to the remaining lakes and waterbodies in urban areas is a necessity before they are lost.

Many independent houses in Chennai have now given way to multi-storeyed flats leading to the disappearance of home garden trees (coconut, mango, jackfruit). This could also be a reason for the reduction in the city's green cover. As a condition to granting planning permission for new structures, the GCC should consider mandating the planting of at least five trees in a plot that measures over 2,400 square feet along the plot boundary. This will help greening the city in a decentralised manner. The horticulture department should also promote roof gardens and kitchen gardens for every household to m cultivate greens and medicinal plants. This will not only help in augmenting city biodiversity but also help in improving the health and well-being of people.

Need for collective action
City managers need to take stringent action against those who destroy greenery and pollute waterbodies. It is heartening that the Supreme Court of India has been tough on the executive for the mass destruction of trees over acres in the Kancha Gachibowli area in Hyderabad, for the development of IT infrastructure. Development should not lead to the wanton destruction of biodiversity. City managers must mainstream biodiversity considerations in decision making, taking a long-term view to achieve sustainable development. The involvement of all stakeholders such as the resident welfare associations, non-governmental organisations and corporates in city greening and protecting waterbodies from pollution and encroachment is important to make biodiversity conservation a mass movement in cities.

The views expressed are personal

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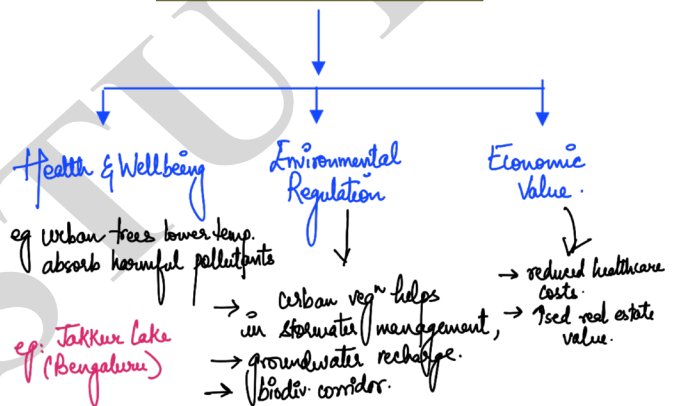
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Key points from the article

- The **International Day for Biological Diversity 2025** (May 22) is themed **"Harmony with Nature and Sustainable Development,"** underscoring the need to align biodiversity conservation with urban growth.

- Rapid **urban expansion** is putting ecosystems under pressure, with nearly **25% of global species at risk of extinction**, according to the IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services).

- As per the **Forest Survey of India (FSI),** forest cover in Indian urban areas is alarmingly low—averaging just **0.26%** of total urban land.

- Between 2021 and 2023, **Chennai** lost approximately **2.6 sq. km**, and **Hyderabad** lost **1.6 sq. km** of forest cover, reflecting a concerning trend in major cities.

1. **Global & National Biodiversity Commitments:**

- The **Kunming-Montreal Global Biodiversity Framework (GBF)** sets an ambitious target to **protect 30%** of both terrestrial and marine habitats by **2030**.

- **UN Sustainable Development Goal 11** and **GBF Target 12** emphasize the integration of **green and blue spaces** in urban planning to create resilient, inclusive, and sustainable settlements.

  - Example: Singapore's "City in a Garden" model shows how biodiversity can be seamlessly integrated into urban design.

Why Biodiversity Matters?

Health & Wellbeing
eg urban trees lower temp. absorb harmful pollutants
eg: Jakkur Lake (Bengaluru)

Environmental Regulation
→ urban vegⁿ helps in stormwater management,
→ groundwater recharge.
→ biodiv. corridor.

Economic Value.
→ reduced healthcare costs.
→ 1sed real estate value.

Global Urban Green Space Standards:
- According to **UN-Habitat** guidelines, cities should aim for:

  - At least **30% tree canopy** coverage

  - **0.5–1 hectare** of public green space

  - Within **300 meters** of residential, educational, or workplace zones

  - Benchmark: Copenhagen and Melbourne have adopted these metrics in city planning policies.

Urban Biodiversity Tracking Tools:
- The **City Biodiversity Index (CBI)** or **Singapore Index**, developed by **ICLEI**, evaluates 23 indicators such as:

  - Presence of **native species**

  - **Ecosystem services** offered

  - **Governance structures** for conservation

  - Example: **Gandhinagar** is implementing CBI to measure biodiversity in its green belts and institutional campuses.

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- Under India's **National Biodiversity Strategy and Action Plan (NBSAP),** cities like **Kochi, Nagpur**, and **Chennai** have initiated city-specific biodiversity audits.

Model Urban Biodiversity Projects in India:

- **Chennai's Million Tree Initiative** and restoration of **Pallikaranai Marshland** showcase urban ecosystem revival through public and institutional partnership.

- The **Care Earth Trust**, in collaboration with the **Greater Chennai Corporation**, has restored **2,400+ sq. meters** of degraded land with **indigenous flora**, fostering microhabitats within the city.

- **Mumbai's Miyawaki forests, Delhi's ridge greening,** and **Bengaluru's lake adoption model** are also emerging as replicable blueprints.

Significance

- Reaffirms the need to **embed biodiversity goals** in every stage of **urban planning and governance** to create cities that are **resilient, liveable, and sustainable.**

- Warns against the adverse effects of **uncontrolled infrastructure expansion** and **real estate development**, which erode natural urban systems.

- Calls for **inclusive participation**—from **municipal bodies, state biodiversity boards**, and **citizen groups**— to implement **decentralised green solutions** such as **community gardens, urban farming**, and **local reforestation projects.**

Overfishing-the threat to ocean wealth, livelihoods

Syllabus

GS Paper 3 – Environment: Biodiversity Conservation, Ocean Resources
GS Paper 1 – Geography: Resource Distribution, Indian Ocean Fisheries

Overfishing — the threat to ocean wealth, livelihoods

The Indian marine fisheries sector has stabilised at around three to four million tonnes of capture a year, indicating that India has reached its maximum potential yield.

Yet, despite this huge output, there is inequity. Small-scale fishers represent 90% of the fishing population but catch only about 10% of the volume; the remaining is by larger mechanised fishing operations. Further, three-quarters of India's marine fisher families live below the poverty line. Attempts to catch 'just one more kilo' with newer nets and bigger engines either yield no more fish or marginally increase volumes but with much higher debt, fuel and other costs for already hard-pressed communities.

On a recent fishing trip aboard a commercial shrimp trawler in the Arabian Sea, the full dynamic playout was evident. For every kilogram of shrimp retained on board, the nets disgorged over 10 kilograms of discarded bycatch. These were juvenile fish and non-target species which were tossed back (more dead than alive) into the waves.

India's multi-species, multi-gear fisheries make bycatch management especially intractable, with a single shrimp trawl impacting the populations of dozens of fish and invertebrate species. Such indiscriminate trawling damages marine biodiversity by degrading reef and oceanic communities, undermining food webs, and eroding the foundations of future catches.

The ecological consequences are stark. Juvenile fishing, facilitated by smaller mesh sizes (<25mm) that allow sub-legal fish to enter nets, depletes spawning stock biomass, driving long-term declines in commercially important species such as sardine and mackerel. These types of declines can take years or even decades to recover – or in worst case scenarios, are irreversible.

Such collapses abroad offer concerning precedents. Canada's Northern cod fishery crashed in 1992 under heavy harvest pressure, prompting a moratorium that still leaves stocks far below historical levels. Off California, the Pacific sardine fishery collapsed mid-century in the 1900s, forcing closures from 1967 to 1986 and again in recent decades as populations failed to

Letting overexploitation continue will only deepen poverty, erode marine biodiversity and forfeit sustainable yields

Vijai Dharmamony
is Senior Manager, Climate Resilient Fisheries, Environmental Defense India Foundation

rebound. India's regulatory framework is complicated, which only adds to this. All the coastal State/Union Territories have their own Marine Fisheries Regulation Act (MFRA), creating a patchwork of rules that unscrupulous fishermen can (and do) circumvent simply by landing their catch across a State border. A species protected as juveniles in one State may be legal in a neighbouring State, enabling the seamless laundering of undersized fish and undermining conservation efforts.

India should look into harmonising these disparities into a national standard by integrating scientifically established catch limits, have uniform minimum legal size (MLS), fishing gear restrictions, and closed seasons. Without these, India will continue to face MFRA enforcement issues, and consequent depletion of marine biodiversity.

Solutions to pursue

There are lessons from other countries. New Zealand's (fish) quota management system (QMS) has shown excellent results by aligning science and policy. Since its introduction in 1986, total allowable catches are calibrated against robust stock assessments – which have stabilised and, in some cases, rebuilt key fisheries, while providing clear, tradable quotas (individual transferable quotas) to commercial, recreational, and customary fishers alike.

Adapting the QMS for India's large mechanised trawl fleet, at least on a pilot basis, could curb the depletion of marine biodiversity by tying fishing allowances to actual stock health, rather than vessel size or fuel use. Targeted size limits and minimum legal-size regulations already pay dividends.

There are success stories from India. After Kerala enforced a minimum legal size for threadfin bream, catches rose by 41% within a single season – allowing fish to mature produces greater yields over time and better income for the fishers.

Reining in the fish-meal and fish-oil (FMFO) industry is another urgent priority. The bycatch

feeding this industry creates perverse incentives, as more discard means more feed profits. In some States' trawl fisheries, over half the haul weight is low-value bycatch, much of which is juvenile fish. This bycatch is ground into meal and a lot of it is exported, while Indian fish consumers and the Indian aquaculture industry lose out on critical nutrition sources. Capping FMFO quotas, mandating on-board release of juveniles, or redirecting bycatch toward local aquaculture brood stock would align industry incentives with biodiversity conservation.

However, achieving these reforms demands action at multiple levels. At the national level, the central government needs to optimise vessel licences, infrastructure grants and fisheries subsidies, towards an ecosystem-based regulatory approach. States will need to bolster enforcement with well-equipped patrols and real-time reporting tools. Fisher cooperatives and village councils should be empowered as co-managers of local marine protected areas and breeding sanctuaries. Urban and rural consumers must wield their buying power, choosing only legally sized, sustainably sourced seafood, and refusing offerings that undermine marine biodiversity.

We stand at the crossroads

Climate-driven storms, coastal erosion, and market volatility already threaten India's nearly 8,000 km (recalculated to 11,098 km recently) coastline and its 3,000 plus fishing villages. Letting overexploitation continue will deepen poverty, erode marine biodiversity, and forfeit sustainable yields that could feed millions. But the solutions lie within reach: science-based quotas, harmonised regulations, community-led stewardship, and a policy shift that focuses on long-term sustainability.

On this International Day for Biological Diversity, let us pledge to protect India's vibrant marine life. We must do this not just for our food and livelihoods today but also for the ecological resilience and equitable prosperity of generations to come.

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- **India's marine fishery output** holds steady at **4 million tonnes annually,** but **90% of fishers (small-scale)** catch just **10%**—the rest is dominated by **large mechanised trawlers.**
- **75% of marine fisher families live below the poverty line**, despite their dependence on dwindling coastal resources.
- **Shrimp trawling** leads to significant **bycatch waste:** for every **1 kg of shrimp**, over **10 kg** of marine life is discarded.
- Fisheries governance is hindered by **fragmented state-level laws** under the **Marine Fishing Regulation Acts (MFRAs).**
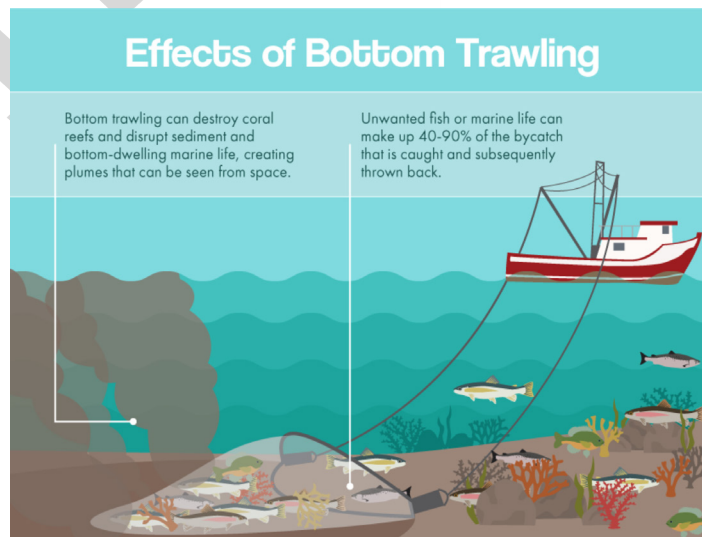
Challenges in Current Practices:

- **Bycatch & Juvenile Fishing:**
  - Destructive gears and **sub-legal mesh nets (<25mm)** allow juveniles and non-target species to be caught, weakening the ecosystem and future stock.
  - Example: Shrimp trawlers in Gujarat and Tamil Nadu discard tonnes of young sardines and croakers—key to ecosystem balance.
- **Cross-border Overfishing:**
  - **Open-access trawling across state waters** leads to unsustainable fishing and **conflict between fisher communities.**
- **High Investment, Low Returns:**

Economic stress forces fishers into buying **larger boats and powerful engines**, but with **decreasing catch and rising costs**, the returns remain marginal.

Environmental Impacts:
- **Fish Stock Collapse:**
  - Decline in species like **sardines, mackerels**, and **pomfrets**— some local populations have taken decades to recover.
- **Marine Habitat Degradation:**
  - Bottom trawling **destroys reefs and seabeds**, affecting biodiversity and breeding grounds.

Effects of Bottom Trawling

Bottom trawling can destroy coral reefs and disrupt sediment and bottom-dwelling marine life, creating plumes that can be seen from space.

Unwanted fish or marine life can make up 40-90% of the bycatch that is caught and subsequently thrown back.

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What can be done ?

- **Protecting Juveniles:**
  - Enforce **Minimum Legal Size (MLS)** standards.
  - Example: Kerala increased threadfin bream MLS to protect breeding fish.
- **Science-led Quotas & Seasonal Bans:**
  - Adopt models like **New Zealand's QMS** (Quota Management System) to cap total annual catch scientifically.
- **Aquaculture Reform:** Regulate **broodstock sourcing** to reduce pressure on wild fish populations.
- **Strengthen Monitoring & Compliance**: Invest in **real-time patrolling**, **VMS tracking**, and digital catch reporting (MCS systems).
- **Community Co-management**: Empower **fisher cooperatives** to comanage **Marine Protected Areas (MPAs)** and take part in decisionmaking.
- **Consumer Awareness:** Promote **sustainably sourced, small-scale fish products** in urban markets.
  - Example: FSSAI's "Eat Right" initiative encourages responsible seafood choices.

Legal & Policy Imperatives:
- **National Marine Fisheries Code:**
  - Unify and modernise fragmented MFRAs into a **single central framework** with **ecosystem-based management.**
- **Gear Regulation & Enforcement:**
  - Mandate gear selectivity and **ban destructive practices** like pair trawling in coastal zones.

Stories from the heart

Syllabus

GS Paper 1 – Indian Society: Regional Languages and CulturalDiversity
GS Paper 2 – Governance: Promotion of Indian Languages, Cultural Heritage Essay Paper – Literature and Society, Language and Identity

Stories from the heart
Banu's Booker will help regional languages gain global recognition

The marginalised have come to the fore with Banu Mushtaq winning the International Booker Prize for 2025. In a first for Kannada, Mushtaq and her translator Deepa Bhasthi walked away with the top honours on Tuesday night in London for *Heart Lamp*. This is also the first time in the history of the prize that a collection of short stories has won. Breaching walls, breaking ceilings, and enduring angry outbursts, Mushtaq chronicles the lives of Muslim women and their anxieties. Her stories are also peopled by clueless husbands, children who are like "monkeys without tails", loving and, sometimes overbearing, grandmothers, muscular brothers and maulvis. But as Mushtaq has said in interviews, the narratives are primarily about women and how "religion, society, and politics demand unquestioning obedience from them, and in doing so, inflict inhumane cruelty upon them". She writes with candour and wry humour, even as the women are often struggling to stay afloat with their backs against the wall. In her moving acceptance speech, Mushtaq harped on the power of words to "create a world where every voice is heard, every story matters, and every person belongs".

Showering praise on Kannada, she said that it is a language that sings of resilience and nuance – "to write in Kannada is to inherit a legacy of cosmic wonder and earthly wisdom". The 77-year-old Mushtaq hails from Hassan in Karnataka, like another illustrious writer, Raja Rao, who wrote in Kannada, English and French. Mushtaq, a lawyer and activist, was inspired to write after hearing of the "pain, suffering, and helpless lives" of the women she interacted with. The "radical translation" by Bhasthi was praised by the Jury chair Max Porter who said it "ruffles language to create new textures in a plurality of Englishes". *Heart Lamp's* Booker, just three years after Geetanjali Shree won for *Tomb of Sand*, should open doors for India's rich regional languages to gain a wider readership. Mushtaq follows a trail of writers such as Perumal Murugan, Vivek Shanbhag, Bama, Jayant Kaikini, M. Mukundan and S. Hareesh who observe the human condition in a socio-political context with their translators ensuring the rhythms of the original language are not lost. In a world that often tries to divide people, Mushtaq said that literature remains one of the "last sacred spaces where we can live inside each other's minds if only for a few pages". It is the only place that can embrace stories from unheard corners and translations that defy borders.

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Key points from the article

- **Banu Mushtaq**, a 77-year-old author from Karnataka, has been awarded the **2025 International Booker Prize** for her Kannada short story collection, Heart Lamp.

- Translated into English by **Deepa Bhasthi**, this marks the **first time a Kannada work** and a short story collection have received this prestigious recognition.

- The award casts a global spotlight on India's **regional languages**, with a particular focus on **Kannada.**

- Mushtaq's stories delve into the lives of **Muslim women**, portraying their **socioreligious challenges, family roles**, and **inner strength.**

- Her narratives explore the **intersections of gender, faith, and societal norms**, revealing how conformity is enforced and suffering internalized.

- Using **wit, satire**, and **emotional honesty**, she sheds light on the struggles women face within systems of **patriarchy, poverty**, and **political pressure.**

- The English translation has been acclaimed for its boldness in **"ruffling the language,"** preserving the original's rhythm and emotional tone while creating new linguistic textures.

- Mushtaq's recognition follows **Geetanjali Shree's 2022 Booker win** (Tomb of Sand), continuing a trend of **international acclaim for Indian vernacular literature.**

- She belongs to a lineage of writers like **Perumal Murugan, Vivek Shanbhag**, and **Jayant Kaikini**, who bring India's **socio-political realities** to the global stage.
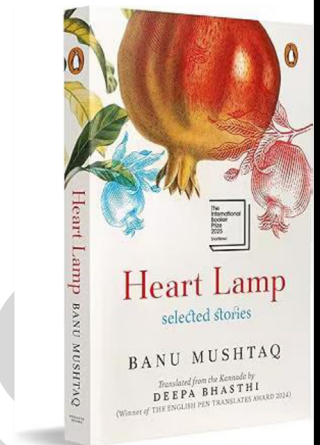
Significance:

- Validates the **global relevance of Indian regional languages** and their literary traditions.

- Promotes initiatives to **translate, preserve, and support** regional literature through institutions like the **Sahitya Akademi** and the **National Translation Mission.**

- Reinforces literature's role in **amplifying marginal voices**, encouraging **empathy, inclusion**, and **cultural understanding.**

Lion count grows by 32% in 5 years,

Syllabus

GS Paper 3 – Environment: Wildlife Conservation, Human-Wildlife Conflict
GS Paper 2 – Governance: Government Policies and Conservation Programs Essay Paper – Biodiversity and Human Coexistence

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Lion count grows by 32% in 5 years, expands beyond protected areas

Jacob Koshy
NEW DELHI

India's lion population, exclusively concentrated in Gujarat, has risen by 32% between 2020 and 2025, with 891 lions reported, according to a report from the Gujarat Forest Department released on Wednesday. The number of adult females - a proxy for future growth - rose by 27% to 330 individuals.

Though the highest number of lions - 394 - have been observed in the Gir National Park and Paniya Wildlife Sanctuary, considered the "source" population, the latest survey underlines the continuing trend of lions expanding into more parts of Gujarat. More lions have now been reported outside the core protected zone than in-

Strong growth: The number of adult females rose by 27% to 330 individuals. VIJAY SONEJI

side. This translates to increasing proximity to human settlements and subsequent conflict.

Y.V. Jhala, an expert on lion conservation and formerly with the Wildlife Institute of India (WII), said that while Gujarat continued to be a good model for lion conservation, it

was important to create new spaces where lions could live without human contact.

"In theory, Gujarat can host up to 2,000 lions, but that is due to the availability of prey. This is evidenced by the rising number of cattle carcasses. While communities who

have been living with lions are tolerant and those who lose their animals are being compensated, there is always a fine balance. For the future, new regions - within or outside Gujarat - are required," he told *The Hindu*. The Kuno National Park in Madhya Pradesh, which is home to translocated cheetahs, was originally intended to be a new habitat for lions.

In March, Prime Minister Narendra Modi approved Project Lion, a ₹2,900-crore project to improve lion habitat and develop new habitat within Gujarat.

From 2015 to 2020, the territorial range of the lions extended to 30,000 sq. km, reflecting a 36.4% growth. By 2025, the area reached 35,000 sq. km, registering a 16.67% increase.
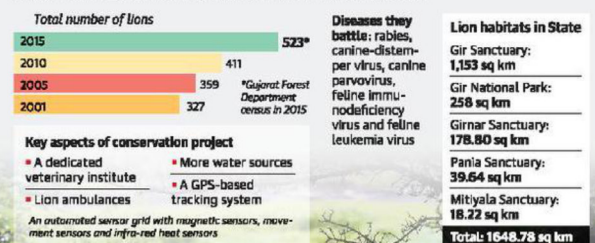

Asiatic Lion

- Smaller than African
- ER → IUCN
- "Pride"
- grasslands, decidous forests.
- Project Lion → Central govt (2020)

Threats →
- Natural disasters
- Hunting/poisoning
- falling into wells
- electrified fences.
- poaching
- Canine distemper virus (CDV).

Saving the roar

The Centre and the Gujarat government have joined hands for the conservation of the Asiatic Lion. A look at the the present situation of lions in the State

Total number of lions

Year	Count
2015	523*
2010	411
2005	359
2001	327

*Gujarat Forest Department census in 2015

Key aspects of conservation project
- A dedicated veterinary institute
- Lion ambulances
- More water sources
- A GPS-based tracking system

An automated sensor grid with magnetic sensors, movement sensors and infra-red heat sensors

Diseases they battle: rabies, canine-distemper virus, canine parvovirus, feline immunodeficiency virus and feline leukemia virus

Lion habitats in State

Gir Sanctuary: 1,153 sq km

Gir National Park: 258 sq km

Girnar Sanctuary: 178.80 sq km

Pania Sanctuary: 39.64 sq km

Mitiyala Sanctuary: 18.22 sq km

Total: 1648.78 sq km

Syllabus

GS Paper 1 – Art & Culture: Ancient Maritime History, Ajanta Paintings
GS Paper 2 – Science & Technology: Naval Innovation, Heritage Technology

Navy recreates stitched ship based on 5th century Ajanta paintings

The Hindu Bureau
NEW DELHI

The Indian Navy on Wednesday formally inducted and named a stitched sail ship, *INSV Kaundinya*, at a ceremonial event held at the Naval Base in Karwar. *INSV Kaundinya* is a recreation of a fifth-century vessel depicted in the paintings at the Ajanta Caves.

The project was initiated through a tripartite agreement signed in July 2023 between the Union Culture Ministry, the Navy, and Hodi Innovations, with funding from the Culture Ministry, and is meant to showcase India's rich shipbuilding heritage.

"Following the keel laying in September 2023, the vessel's construction was undertaken using a tradi-

Flaunting heritage: The stitched sail ship has been named *INSV Kaundinya* after the legendary Indian mariner. SPECIAL ARRANGEMENT

tional method of stitching by a team of skilled artisans from Kerala, led by master shipwright Babu Sankaran. Over several months, the team painstakingly stitched wooden planks on the ship's hull using coir rope, coconut fibre and natural resin," the Navy said in a state-

ment. It was launched in February 2025 at Goa.

Transoceanic trip next
Named after Kaundinya, the legendary Indian mariner, the ship will now begin preparations for a transoceanic voyage along the ancient trade route from Gujarat to Oman, sche-

duled for later this year, the Navy said.

The Navy played a central role in the project, overseeing the design, technical validation, and construction process. With no surviving blueprints or physical remnants, the design had to be extrapolated from a two-dimensional artistic iconography.

The stitched ship is equipped with square sails and steering oars, which are entirely alien to modern day ships. The hull geometry, rigging, and sails had to be reimagined and tested from first principles.

The Navy collaborated with the Department of Ocean Engineering, Indian Institute of Technology-Madras, for model testing to validate the vessel's hydrodynamic behaviour at sea.

TATHASTU
Institute Of Civil Services

📞 9560300770   🌐 www.tathastuics.com   ✉ support@tathastuics.com
HEAD OFFICE: 53/1, UPPER GROUND FLOOR, BADA BAZAR ROAD, OLD RAJINDER NAGAR, NEW DELHI-110060

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