

**WILDLIFE CONSERVATION**

❖ **Why is there concern about the tiger population in the Western Ghats?**

➤ **CONTEXT:** To commemorate 50 years since Project Tiger ( a landmark conservation programme to save Indian tigers from extinction ) Prime Minister Narendra Modi inaugurated an International Big Cat Alliance conference in Mysuru where he also revealed that India had a minimum of 3,167 tigers as per the latest count (2022).

➤ **What is Project Tiger?**

• Project Tiger began in 1973 and was premised on creating enabling wildlife protection laws, expanding the number of tiger reserves and, garnering public support and assistance from forest dwelling communities to create conditions that would enable the cat to move unfettered.

• Apart from increasing the number of protected reserves, it also entailed creating corridors that enabled movement between them.

• From nine reserves covering 18,278 square km in 1973, India now has 53 reserves covering 75,796 sq. km, which is roughly 2.3% of India's land area.

• At present there are five major 'tiger-landscapes' that have evolved:

- ✓ Shivalik-Gangetic plains
- ✓ Central India and Eastern Ghats
- ✓ Western Ghats
- ✓ North Eastern Hills
- ✓ Brahmaputra Flood Plains
- ✓ The Sundarbans.

• Landscapes function as biological units wherein tiger populations can share common individuals, a common gene pool, and potentially disperse between populations.

• Since 2006, a census is carried out every four years to estimate populations in these landscapes as well as determine whether they continue to provide salubrious conditions for the animal to thrive.

• Not all landscapes are equal, with some having better conditions and tiger numbers and others not having enough prey.

• Every four years, a report, called the 'Status of Tigers' is published by the National Tiger Conservation Authority (NTCA) laying out this information.

➤ **What does the latest report suggest?**

• The tiger census is an elaborate exercise that involves laying out camera traps to photograph the presence of tigers and other wildlife.

• There are also forest officials who conduct physical surveys to spot tigers and results of camera traps and such physical surveys are combined via modelling by scientists at the Wildlife Institute of India (WII), to calculate tiger populations in these landscapes.

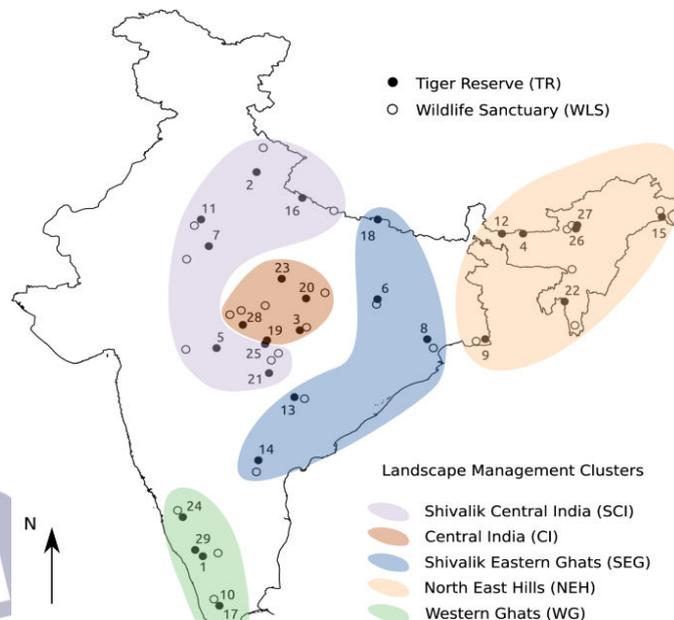
• Though the survey and data gathering, for the latest cycle, was completed in 2022 some analysis is pending due to which NTCA has only publicised the lowest bound of animals present based on the number of unique tigers photographed via camera traps.

• In 2023, 3080 unique tigers were photographed; in the last survey of 2018, 2,461 such tigers were clicked though the computed total was 2,967. In 2023 the modelling estimates, or the number of tigers that haven't been captured on cameras, is reportedly incomplete and so the publicised figure – of 3,167 – is subject to revision.

➤ **What does it reveal about the health of tiger reserves?**

• The usual tiger survey report contains information on the number of tigers located outside protected areas, number of adults and sub-adults; none of these appear in the latest survey.

• However, variations in landscapes have been highlighted. Population increase was "substantial," in Shivalik and the Gangetic flood plains which is followed by Central India, North Eastern Hills and Brahmaputra flood plains and Sundarbans while in the Western Ghats, the tiger population has reduced.



- There were 804 unique tigers photographed in the Shivalik-Gangetic plains, which is higher than the estimated population of 646 in 2018.
- The Central Indian landscape has witnessed an increase in tiger population, with 1,161 unique tigers being photographed compared to an estimated population of 1,033 in 2018. Tigers have reportedly occupied new areas in Madhya Pradesh and Maharashtra.
- In 2018, the Sundarbans population was estimated to be 88, whereas in 2022, images of 100 tigers were captured. The population is “steady, with a limited potential to extend its range,” though the tigers face threats from forest exploration, fishing, palm and timber extraction, and the expansion of waterways.
- **What is happening in the Western Ghats?**
- The great concern, however, is the Western Ghats. The protected areas within the Western Ghats are some of the most biodiverse in the country.
- As of 2018, the tiger population here was estimated at 981. In 2022, 824 unique tigers were recorded, pointing to a decline in some regions.
- While tiger populations within protected areas have either remained stable or increased, tiger occupancy outside of these regions has significantly decreased in areas like the Wayanad landscape, BRT Hills, and the border regions of Goa and Karnataka.
- The Mookambika-Sharavathi-Sirsi landscape and Bhadra have also experienced a substantial decline in tiger occupancy.
- Beyond the protected area border of the Anamalai-Parambikulam complex, a decrease in tiger occupancy was also observed.
- Although tiger populations in the Periyar landscape was stable, tiger occupancy outside has decreased.
- Local extinctions of tiger populations were noticed in Sirsi, Kanyakumari, and Srivilliputhur.
- **What are the causes of local declines?**
- India’s tiger population annually grows at about 6% an annum with high mortality rates among cubs.
- Apart from natural mortality, the other causes are threats from:
  - ✓ Invasive species
  - ✓ Man-animal conflict
  - ✓ Infrastructure development that impedes movement of the animal
  - ✓ Disease
  - ✓ Poaching
  - ✓ Many reserves not having sufficient prey to sustain viable populations.
- While the quadrennial surveys since 2006 have always recorded a rise in numbers: 1,411 in 2006 to 3,197 in 2022, critics have raised questions on the methods employed in estimation.
- “The criticisms levelled so far have ranged from fundamental mathematical flaws, design deficiencies and manipulation of photographic data, and a total lack of transparency in data-sharing with independent scientists capable of reliably reviewing the analyses and results to be drivers for local extinctions.
- There were also accusations, in the 2018 survey, that many photographed tigers were double counted. Though scientists from the WII have countered these claims, there hasn’t yet been an alternate estimation of India’s tiger numbers nor any move from the NTCA-WII to accommodate changes in the way tigers are counted.

## PRELIMS

### 1. Pradhan Mantri Jeevan Jyoti Bima Yojana

➤ **CONTEXT: Public Sector Banks (PSBs) have set a target for the sale off lagship government insurance schemes Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) and Pradhan Mantri Suraksha Bima Yojana (PMSBY) in FY24.**

- Pradhan Mantri Jeevan Jyoti Bima Yojana is a government-backed Life insurance scheme in India.
- It was launched in 2015 with a view to enhance the level of insurance penetration in the country and to provide insurance cover to common people, especially poor and the under-privileged sections of the society.
- Pradhan Mantri Suraksha Bima Yojana is available to people (Indian Resident or NRI) between 18 and 50 years of age with bank accounts.
- People who join the scheme before completing 50 years can, however, continue to have the risk of life cover up to the age of 55 years subject to payment of premium.
- Premium: 330 per annum. The amount is automatically debited from the account.
- The GST is exempted on Pradhan Mantri Suraksha Bima Yojana.
- This insurance scheme is offered through banks and administered through public sector general insurance companies.
- Risk Coverage: 2 Lakh in case of death for any reason. In case of unexpected death or full disability, the payment to the nominee will be Rs 2 lakh and in case of partial Permanent disability Rs 1 lakh.

- The scheme will be offered by Life Insurance Corporation and all other life insurers who are willing to join the scheme and tie-up with banks for this purpose.
- Full disability has been defined as loss of use in eyes, hands or feet. Partial Permanent disability has been defined as loss of use in one eye, hand or foot.
- **Pradhan Mantri Suraksha Bima Yojana**
- Pradhan Mantri Suraksha Bima Yojana is a government-backed accident insurance scheme in India. It was launched in 2015.
- Aim: To enhance the level of insurance penetration in the country and to provide insurance cover to common people, especially poor and the under-privileged sections of the society.
- Eligibility: Available to people in age group 18 to 70 years with bank account. Any person having a bank account and Aadhaar number linked to the bank account.
- Premium: 12 per annum.
- Risk Coverage: Death - Rs 2 Lakh
- ✓ Total and irrecoverable loss of both eyes or loss of use of both hands or feet or loss of sight of one eye and loss of use of hand or foot - Rs 2 Lakh Total and irrecoverable loss of sight of one eye or loss of use of one hand or foot – Rs.1 Lakh.
- Terms of Risk Coverage: A person has to opt for the scheme every year. S/He can also prefer to give a long-term option of continuing in which case his/her account will be auto-debited every year by the bank.
- Who will implement this Scheme?
- The scheme will be offered by all Public Sector General Insurance Companies and all other insurers who are willing to join the scheme and tie-up with banks for this purpose.
- Government Contribution
- Various Ministries can co-contribute premium for various categories of their beneficiaries from their budget or from Public Welfare Fund created in this budget from unclaimed money.
- This will be decided separately during the year. Common Publicity Expenditure will be borne by the Government.
- 2. **Pralay Missile**
- **CONTEXT: India is going to buy 250 more Pralay ballistic missiles for the services to strengthen them on the northern borders, further boosting the firepower of the defence forces.**
- The move comes soon after the defence ministry cleared 120 of these weapon systems for the Air Force which cannot be intercepted by any enemy air defence system.
- The use of Pralay tactical ballistic will be the first time in the history of the service, as ballistic missiles have been cleared by the government for use in tactical operations.
- **About**
- Pralay, which has a range of 150 to 500 kilometres, is propelled by a solid-propellant rocket motor and other novel technologies.
- It is an indigenous short-range ballistic surface-to-surface (SRBM) missile.
- The missile will be India's first tactical quasi-ballistic missile and will give the armed forces the capability to hit enemy positions and key installations in actual battlefield areas.
- It is capable of carrying a conventional warhead of about 350 kg to 700 kg, which gives it a deadly punitive capability.
- It can carry a high explosive preformed fragmentation warhead, penetration-cum-blast (PCB) and runaway denial penetration submunition (RDPS).
- **Background**
- The Pralay missile project was sanctioned in 2015 and is a derivative of the Pahaar missile programme, which was first tested in 2011.
- Pralay was formed through elements from multiple missile programmes that include the K-series of submarine-launched ballistic missiles and the ballistic defence shield programme.
- The canisterised Pralay missile has been developed according to the specifications and requirement of the Army, which was looking to arm itself with a tactical conventional missile that could be used on the battlefield. Both China and Pakistan have tactical ballistic missiles.
- **What makes Pralay deadly?**
- The Indian missile can be compared to China's Dong Feng 12 and the Russian Iskander missile that has been used in the ongoing war with Ukraine.
- The US Army is in the process of increasing the range of a similar short-range ballistic missile called the Precision Strike Missile (PrSM).
- 3. **NISAR satellite to map Himalayas' seismic zones**

- **CONTEXT: India's ISRO and NASA are jointly developing a satellite called NISAR that will map the most earthquake-prone regions in the Himalayas with unprecedented regularity.**
- The data this will generate can potentially give advance warning of land subsidence, as recently observed in Joshimath, Uttarakhand, as well point to places that are at greatest risk from earthquakes.
- The satellite will use two frequency bands to image the seismically active Himalayan region and every 12 days, create a "deformation map" to give advance warning of land subsidence and places that are at greatest risk from earthquakes.
- These two frequency bands will together provide high-resolution, all-weather data from the satellite that is expected to follow a sun-synchronous orbit and will be launched in January 2024.

➤ **NISAR Satellite**

- NISAR is an Earth-observation satellite, being jointly developed by the National Aeronautics and Space Administration (NASA) and the Indian Space Research Organisation (ISRO).
- It was envisioned by NASA and ISRO eight years ago in 2014.
- The satellite will operate for a minimum of three years. **It is a Low Earth Orbit (LEO) observatory.** NISAR will map the entire globe in 12 days.
- The mission will provide critical information to help manage natural disasters such as earthquakes, tsunamis, and volcanic eruptions, enabling faster response times and better risk assessments.
- It will provide a wealth of data and information about the Earth's surface changes, natural hazards, and ecosystem disturbances, helping to advance our understanding of Earth system processes and climate change.
- NISAR data will be used to improve agriculture management and food security by providing information about crop growth, soil moisture, and land-use changes.

**4. Wet Bulb Temperature**

- **CONTEXT: The deaths of 11 people in Mumbai due to heatstroke, while they were attending a government meeting in an open space, is possibly the largest heatwave-related death toll from a single event.**

- According to the IMD, heatwave conditions are currently prevailing in some areas of Gangetic West Bengal, coastal Andhra Pradesh and Bihar.

➤ **About**

- The combination of high temperature and high humidity, referred to as the "wet bulb temperature", is what makes heatwaves deadly.
- Wet-bulb temperature (WBT) combines dry air temperature with humidity in essence, it is a measure of heat-stress conditions on humans.
- The term comes from how it is measured.
  - ✓ If a wet cloth slide over the bulb of a thermometer, the evaporating water from the cloth will cool the thermometer down.
  - ✓ This lower temperature is the WBT, which cannot go above the dry temperature.
  - ✓ If humidity in the surrounding air is high, less evaporation will occur, so the WBT will be closer to the dry temperature.

➤ **Significance of humidity:**

- Humidity is a critical factor in heat exposure because high humidity does not allow sweat to evaporate off the surface of the skin, the primary way in which humans lose the heat generated within the body.
- The cooling effect that the evaporating sweat produces is essential in maintaining a stable body temperature.
- The resilience of people to heatwaves varies with age and depends on underlying health conditions.

**Q.** What are the key milestones in the 75-year diplomatic relationship between India and Thailand. Discuss how can both nations leverage this relationship to enhance their strategic partnership in the future.

- India and Thailand share a long-standing relationship that dates back over 2,000 years. In 2022, the two nations celebrated the completion of 75 years of diplomatic relations.
- India and Thailand have deepened their engagement in several areas, including trade, defense, culture, and people-to-people ties. This milestone provides an opportunity to reflect on the achievements of this relationship and explore ways to deepen cooperation in the future.

**Body**

- **Key Milestones:** India's 'Act East' policy has been complemented by Thailand's 'Act West' policy in bringing the two countries closer.
- In recent years, both nations have taken steps to enhance their strategic partnership.

- **Bilateral Institutional Mechanisms:**
  - ✓ Joint Commission Meeting (JCM) The 8th round of JCM was held in India in 2019 in New Delhi. The JCM was co-chaired by foreign ministers of both countries.
  - ✓ Foreign Office Consultations (FOCs): The 5th India-Thailand Foreign Office Consultations were held in Bangkok in 2019.
  - ✓ Joint Task Force (JTF): 4<sup>th</sup> Meeting of JTF on Maritime Cooperation Between India and Thailand was held in 2021 in virtual mode.
- **Multilateral Cooperation:** Both countries cooperate closely in the ASEAN, East Asia Summit (EAS) and Bay of Bengal Initiative for Multisectoral Technical and Economic Cooperation (BIMSTEC) groupings as also in Mekong Ganga Cooperation (MGC), Asia Cooperation Dialogue (ACD), Indian Ocean Rim Association (IORA) and Ayeyarwady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS).
- **Defense Cooperation:** In 2016, India and Thailand signed a memorandum of understanding to enhance defense cooperation, which includes joint military exercises and intelligence-sharing.
  - ✓ Exercise Maitree, Ex-Cobra Gold are some examples.
- **Economic & Commercial Partnership:**
  - ✓ **Bilateral Trade:** The bilateral trade and investment reached US\$ 9.76 billion in 2020 despite the pandemic situation.
  - ✓ **Connectivity:** India-Myanmar-Thailand Trilateral Highway, which aims to connect Moreh in India with Mae Sot in Thailand via Myanmar.
  - ✓ India-Myanmar-Thailand railway line, Mekong Ganga Cooperation (MGC) etc. which would further enhance connectivity and trade between the countries.
- **Cultural Cooperation:** An Indian Cultural Centre was opened in Bangkok (the Swami Vivekananda Culture Centre).
- **Cooperation in the field of Education:** Currently there are five India Studies Centers in Thailand at Chulalongkorn University, Silpakorn University, Mahidol University, Thammasat University and Chiang Mai University.

**Measures to enhance ties:**

- To leverage this relationship and enhance their strategic partnership in the future, India and Thailand can take several measures.
  - ✓ Both nations can deepen their engagement in areas such as trade, tourism, and culture.
    - India can continue to promote its "Act East" policy, which focuses on enhancing economic and strategic ties with Southeast Asia.
    - India can also seek to enhance its presence in the region by investing in infrastructure development, such as the development of ports and roads.
- India and Thailand can enhance their defense cooperation by sharing best practices and technology.
  - ✓ India can share its expertise in areas such as defense production and counter-terrorism with Thailand.
  - ✓ Both nations can also engage in more joint military exercises and intelligence sharing to enhance interoperability and combat readiness.
- India and Thailand can work together to promote regional stability and address key strategic issues, such as the South China Sea dispute.
  - ✓ India can use its diplomatic influence to promote a peaceful resolution to the dispute, while also engaging with regional actors to promote regional stability.

**Conclusion**

- In conclusion, the 75-year diplomatic relationship between India and Thailand has been marked by several key milestones.
- Both nations have taken steps to enhance their strategic partnership in recent years, and there is significant potential for deeper engagement in the future.
  - By leveraging this relationship and enhancing their cooperation, India and Thailand can promote regional stability and contribute to the prosperity of the region.

**MCQs**

1. With reference to Pralay Missile, consider the following statements:
  1. It is an indigenous short-range air-to-air missile.
  2. It can hit targets from a distance of 1000 to 1400 km and is powered by a liquid fuel rocket motor.

3. It is developed by the Defence Research Development Organisation (DRDO).  
Which of the statements given above is/are correct?  
a) 1 and 2 only      b) 2 only      c) 2 and 3 only      **d) 3 only**
2. Consider the following statement with regards to Pradhan Mantri Suraksha Bima Yojana  
1. It provides coverage for accidental death, total and partial disability, as well as permanent disability.  
2. Anyone between the ages of 18 and 70 may participate in this program, but they must have a bank account.  
Which of the above statement/s is/are correct?  
a) 1 only      b) 2 only      **c) Both 1 and 2**      d) Neither 1 nor 2
3. With reference to Pradhan Mantri Jeevan Jyoti Bima Yojana consider the following statement  
1. The Pradhan Mantri Jeevan Jyoti Bima Yojana provides coverage for death only, therefore the benefit will only go to the nominee.  
2. Any person between 18-70 years of age who possesses a savings account can enroll in this scheme through the participating banks.  
Which of the above statement/s is/are correct?  
**a) 1 only**      b) 2 only      c) Both 1 and 2      d) Neither 1 nor 2
4. The term "Wet Bulb Temperature" (WBT) often mentioned in news, with reference to it consider the following  
1. WBT is a limit that considers heat and humidity beyond which humans cannot tolerate high temperatures.  
2. The Wet Bulb temperature is the temperature of adiabatic saturation.  
Which of the above statement/s is/are correct?  
a) 1 only      b) 2 only      **c) Both 1 and 2**      d) Neither 1 nor 2
5. With reference to NISAR mission consider the following  
1. NISAR has been built by space agencies of the US and India under a partnership agreement  
2. It is a Low Earth Orbit (LEO) observatory.  
3. The mission will provide critical information to help manage natural disasters such as earthquakes, tsunamis, and volcanic eruptions, enabling faster response times and better risk assessments.  
Which of the above statement/s is/are correct?  
a) 1 and 2 only      b) 2 and 3 only      c) 1 and 3 only      **d) 1, 2 and 3**
6. Consider the following statements about the Wild Life Institute of India  
1. It is a "Statutory Organization" constituted under the Environment Protection Act, 1986.  
2. It is an autonomous institution under the Ministry of Environment, Forest and Climate Change.  
3. It conducts wildlife census including Tiger census.  
Which of the above statements is/are correct?  
a) 1 and 2 only      **b) 2 only**      c) 2 and 3 only      d) 3 only
7. Consider the following statements about the Central Electricity Regulatory Commission(CERC).  
1. CERC is a Statutory body established under Electricity Act, 2003.  
2. The Chairman and members of CERC are appointed by the President.  
3. Facilitate open access in inter-state transmission and Promote the development of the power market.  
Which of the following statements is/are correct?  
a) 1 and 3 Only      b) 2 and 3 Only      c) 1 and 2 Only      **d) 3 Only**
8. Consider the following statements about the Status of Women in Agri-food systems report:  
1. The Report has been prepared by the FAO.  
2. Rural women were more at risk from food insecurity than their urban counterparts.  
Which of the above statements is/are correct?  
a) 1 only      b) 2 only      **c) Both 1 and 2**      d) Neither 1 nor 2
9. Olkiluto 3 Nuclear reactor often mentioned in news located in which of the following country?  
**a) Finland**  
b) Germany  
c) Sweden  
d) Norway
10. The T+1 settlement cycle was in the news recently. It is best defined as:  
**a) It is a trade-related settlement that must be done within a day of the completion of a transaction.**  
b) An agreement between a bank and an insurance company.  
c) It is a settlement for unsecured short-term borrowing in the interbank market.  
d) The settlement which drags down export demand and overall domestic demand.