# Prelim Bits 07-01-2022 | UPSC Daily Current Affairs

## Invasion of Waterbodies by Water Hyacinth

*Ernakulam Krishi Vigyan Kendra (KVK) has stepped in to create awareness on water hyacinth (Eichhornia crassipes) invasion of waterbodies.*

- Normally, water hyacinths dominate the water bodies during the July-August period in tandem with the monsoon run-off water and begin to decay as salinity levels in the backwaters increase.
- Unlike the usual trend of water hyacinths decaying by October, the aquatic plant is still seen rampant in the backwaters now, following **extended monsoon and release of water from dams**.
- The plant emerges as a threat mostly to cage aquaculture as it reduces water flow in fish cages installed in the backwaters. Reduced water flow results in reduction in oxygen levels, leading to fish kill.
- Water hyacinth also acts as a breeding ground for parasites and other hazardous organisms that spread diseases among fish.

### Water Hyacinth

- Water hyacinth is a free-floating and flowering **invasive** aquatic plant originated from Amazon Basin, South America.
- It has spread mainly to the tropics and subtropics since the 1800s.
- By the end of the 18th century, Water Hyacinth was introduced in India by Lady Hastings, the wife of the First British Governor-General.
- Water hyacinth grows in all types of freshwaters environments.
- Known as the “German weed” (Bangladesh), the “Florida Devil” (South Africa), the “Terror of Bengal” (India) and the “Japanese Trouble” (Sri Lanka), the plant grows very fast - doubles its population in 2 weeks.
- The reproduction systems of water hyacinth are both sexual and asexual reproduction.
    1. Sexual reproduction by producing seeds through flowers and
    2. Asexual reproduction by budding through vegetative reproduction systems.
- The most favorable conditions for the optimum growth of water hyacinth are nutrient-rich water, temperature ranges from 28°C to 30°C, pH value 6.5 - 8.5, salinity < 2%, 20 mg/L N, 3 mg/L P, and 53 mg/L K.

**Reference**


1. https://www.thehindu.com/news/cities/Kochi/water-hyacinth-poses-threat-to-cage-fish-farming/article38139894.ece
2. https://www.sciencedirect.com/topics/earth-and-planetary-sciences/water-hyacinth
3. https://plants.ifas.ufl.edu/plant-directory/eichhornia-crassipes/
4. https://researchmatters.in/sciqs/water-hyacinth%E2%80%94invasion-good-intent

# Mahakali River

*The Union Cabinet of India has approved the MoU between India and Nepal for construction of bridge over Mahakali River at Dharchula (India) - Dharchula (Nepal).*

- River Mahakali is a **trans-boundary**/international river between India and Nepal.
- Also known as Kali, Sarda along its course, River Mahakali is a Himalayan catchment of Ghagra sub basin of the large Ganga Basin.
- Originating at Kalapani in the Trans Himalayan region, this River ultimately drains the region through the Tarai plains of Uttar Pradesh.
- The large part of catchment area of Mahakali lies in Uttarakhand and rest lies in Nepal. It joins Ghaghra River, a tributary of the Ganges.
- River Mahakali offers potential for hydroelectric power generation.
- The river is also proposed as source for one of the many projects in the Himalayan component of the Indian Rivers Inter-link project.

**Reference**


1. https://pib.gov.in/PressReleasePage.aspx?PRID=1788007
2. http://environicsindia.in/wp-content/uploads/2018/06/Mahakali_Land-and-People_English.pdf


# Anaimalai Tiger Reserve

*Anamalai Tiger Reserve (ATR) Official lauds ICAR-Sugarcane Breeding Institute for its tribal - empowerment interventions.*

- Initially christened as the Anamalai Wildlife Sanctuary, it was changed as Indira Gandhi Wildlife Sanctuary and National Park, before it became the Anamalai Tiger Reserve when Project Tiger was launched in 2008.
- ATR is carved out of the Tamil Nadu portion of the Anamalais (in Kerala and Tamil Nadu).
- The Tamil Nadu part of the reserve is called as ATR. It lies South of the Palakkad gap in the Southern Western Ghats.
- The forest type varies from the dry deciduous to the semi-evergreen, evergreen and the wet temperate.
- **Annual Rainfall** - 500 mm to 5000 mm, least rainfall is on the eastern slopes and most rainfall is on western slopes.
- **Animal Species** - Elephant, Gaur, Water Buffalo, Tiger, Panther, Sloth Bear, Pangolins, Black Headed Oriole, Crocodile, Green Pigeons, Civet Cats, Dhole, Sambar, 31 groups of endangered wildlife macaques.
- **Bird Species** - Pied Hornbill, Red Whiskered Bulbul and Drongo.
- Anaimalais is worth to be designated as '**Anthropological Reserve**' as it supports 6 indigenous people viz. Malasar, Malai malasars, Kadars, Eravallars, Pulayars and Muduvars.

- **Related Links** - Kadar Tribes of Anaimalai Tiger Reserves

**Reference**


1. https://pib.gov.in/PressReleasePage.aspx?PRID=1788000
2. https://tamilnadutourism.tn.gov.in/anamalai-tiger-reserve-2/
3. https://www.atrpollachi.com/about-atr/

# Nai Talim

*The Vice President of India said that the New Education Policy follows the 'Nai Talim' of Mahatma Gandhi by giving importance to the mother tongue as the medium of instruction at school level.*

- In 1937, Gandhiji seeded an important idea to revamp the education system, at a conference in Wardha, Maharashtra through Nai Talim.
- He labelled it as Nai Taleem- a New Education for a New India that would enable every Indian to participate in building a 'good society'.
- The three pillars of Gandhi's pedagogy were
    1. Its focus on the lifelong character of education,
    2. Its social character and
    3. Its form as a holistic process.
- For Gandhi, education is 'the moral development of the person', a process that is by definition 'lifelong'.

**Reference**


1. https://www.pib.gov.in/PressReleasePage.aspx?PRID=1787356
2. https://www.education.gov.in/shikshakparv/docs/ranjana_Nai-Talim.pdf
3. https://naitaleem.wordpress.com/understanding-nai-taleem-essays-and-resources/


# e-DNA Technique

*Two independent studies have found that the DNA floating in the air can boost biodiversity conservation efforts across the world.*

- Animals shed DNA through their breath, saliva, fur or faeces into the environment. These DNAs floating in the air.
- These airborne DNAs are called environmental DNA (e-DNA).
- Tracking animals through e-DNA isn't a new idea. Biologists have observed aquatic organisms by sequencing e-DNA from water samples.
- Similarly, the two teams filtered e-DNA from the air by using sensitive filters attached to vacuum pumps.
- After extracting DNA from the air, the teams made copies using polymerase chain reaction (PCR). The last step was DNA sequencing.
- They then compared the sequencing results with known sequences to identify the animal.
- These e-DNAs can be used to potentially **identify and monitor terrestrial animals**.
- Their findings could help understand the composition of animal communities and detect the spread of non-native species.
- But in its current form, the e-DNA technique cannot provide accurate data for population census. But it will in the future.

**Reference**


https://www.downtoearth.org.in/news/wildlife-biodiversity/dna-from-air-may-help-identify-track-animals-in-the-wild-studies-81018



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