

2019



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# CURRENT AFFAIRS

**ECOLOGY & ENVIRONMENT**

23<sup>rd</sup> December- 28<sup>th</sup> December



BusinessLine



## **1. Flamingo Festival**

### **Why in News?**

The annual flamingo festival will be organised at Pulicat lake and Nelapattu Bird Sanctuary in Nellore district, Andhra Pradesh.

- Around 9,000 to 12,000 migratory birds, belonging to 80 different species, arrive at Pulicat for the purpose of breeding in winter every year.

### **Flamingo Festival**

- The Flamingo Festival is organised annually to encourage tourism in Pulicat and Nellapattu.
- The highlight of this festival is the sight of colourful migratory birds from Siberia that visit the region for nesting and breeding.
- The arrival of birds, which usually starts in the month of September, saw to be much higher than usual this year due to normal rains.
- After the breeding season is over, the migratory birds leave for their native region along with their offspring.
- IUCN status of Greater Flamingo is least concern while IUCN status of Lesser flamingo is Near Threatened.

### **Pulicat Lake**

- It is the second largest brackish water ecosystem in the country after the Chilika lake in Odisha.
- It is located on the border of Andhra Pradesh and Tamil Nadu with over 96% of it in Andhra Pradesh and 4% in Tamil Nadu.
- The island of Sriharikota separates the lake from the Bay of Bengal. Satish Dhawan Space centre is located on this island.

### **Nelapattu Bird Sanctuary**

- Nelapattu Bird Sanctuary is located in Nellore district, Andhra Pradesh.
- It is one of the biggest habitats for pelicans and other migratory birds.
- It is located about 20 km north of the Pulicat Lake on the Andhra Pradesh-Tamil Nadu border.
- It plays an important role in nesting of various birds, especially migratory birds.

## **2. Locust Invasion in Gujarat**

### **Why in News?**

The **migratory insect - locust** has swarmed the northern parts of Gujarat and wreaked havoc on standing crops of castor, cumin, jatropha, cotton, potatoes, and fodder grass.

- Gujarat has not witnessed such an invasion of locusts since 1993-94.
- Originally, the locusts emerged in February this year from Sudan and Eritrea in Africa's Red Sea Coast.
- They travelled through Saudi Arabia and Iran to enter Pakistan, where they invaded the Sindh province and from there they moved into Rajasthan and Gujarat.

### About Locust

- A locust, **known as tiddis locally**, is a large, mainly tropical grasshopper with strong powers of flight.
  - They differ from ordinary grasshoppers in their ability to change behaviour (gregarize) and form swarms that can migrate over large distances.
- Locusts are generally seen during the months of June and July as the insects are active from summer to the rainy season.
- Locusts have a high capacity to multiply, form groups, migrate over relatively large distances (they can fly up to 150 km per day).
- Locusts devour leaves, flowers, fruits, seeds, bark and growing points, and also destroy plants by their sheer weight as they descend on them in massive numbers.
- Food and Agriculture Organisation (FAO) provides information on the general locust situation to the global community and gives timely warnings and forecasts to those countries in danger of invasion.
- Locust Warning Organisation (LWO), Ministry of Agriculture & Farmers Welfare, is responsible for monitoring, survey and control of Desert Locust in Scheduled Desert Areas mainly in the States of Rajasthan and Gujarat.

### 3. Assessment of Plastics along the West Coast of India

#### Why in News?

According to a study by the National Institute of Oceanography (NIO), beaches in Maharashtra are more polluted with micro plastics and macro plastics than those in Goa and Karnataka.

#### Key Points

- The assessment of macro and micro plastic contamination was conducted

for two years on 10 beaches along the western coast of India and their toxic effects on marine organisms.

- **Micro plastics** are plastics which are **less than five millimeters** in length.
- **Macro plastics** are relatively larger particles, of **more than five millimeters**.

### **National Institute of Oceanography**

- It was established on 1 January 1966 following the **International Indian Ocean Expedition (IIOE)** in the 1960s.
- It is one of the constituent laboratories of the Council of Scientific & Industrial Research (CSIR), New Delhi.
- **Headquarters:** Dona Paula, Goa
- **Regional centres:**
  - Kochi (Kerala)
  - Mumbai (Maharashtra)
  - Visakhapatnam (Andhra Pradesh).
- **Principal focus of research:** Observing and understanding special oceanographic characteristics of the Indian Ocean.
- The **major research areas:**
  - Oceanography - biological, chemical, geological/geophysical and physical
  - Ocean engineering
  - Marine instrumentation
  - Marine archaeology.

### **International Indian Ocean Expedition**

- During years 1962-1965, it was one of the greatest international, interdisciplinary oceanographic research efforts to explore Indian Ocean.
- The Second International Indian Ocean Expedition (IIOE-2) for the period of 2015-2020.
  - It is a major global scientific program which will reveal new information on the Indian Ocean which is fundamental for future sustainable development and expansion of the Indian Ocean's blue economy.

## **4. Eco Clubs**

### **Why in News?**

The first annual meeting of the State Nodal Agencies implementing the **National Green Corps (NGC) Eco club Programme** was recently organised.

- The **Ministry of Environment, Forest and Climate Change (MoEF&CC)** in collaboration with the **Gujarat Ecological Education and Research (GEER) Foundation** organised the meet.
- It was held from 20<sup>th</sup>-21<sup>st</sup> December 2019 in Kevadia, Gujarat.
- It is part of the Environment Education Awareness and Training (EEAT) scheme.

### **NGC- Eco Club Programme**

- The Eco Club programme was initiated in 2001-2002.
- **Objective:**
  - To impart knowledge to school children through hands on experience, about their immediate environment.
  - To inculcate compassion among people towards environment and sensitise children on issues related to environment protection, conservation and development.
  - Enhance the Eco club numbers from about 1.5 lakh at present to 2 lakh in the year 2020-21.

### **EEAT Scheme**

- Environment Education Awareness and Training is a central sector scheme of the **Ministry of Environment, Forest and Climate Change (MoEF&CC)**.
- It aims to promote environmental awareness among all sections of the society and to mobilise people's participation for conservation of environment.
- Its objectives are achieved through the implementation of four programmes:
  - National Green Corps (NGC),
  - National Environment Awareness Campaign,
  - Seminars/Workshops, and
  - National Nature Camping Programme.
- Under these programmes, financial assistance is provided to various organisations for undertaking activities and awareness campaigns for the protection of environment in the country.

## **5. Ratapani Wildlife Sanctuary**

### **Why in News?**

The Madhya Pradesh government has launched an anti-encroachment drive at Ratapani Wildlife Sanctuary.

### **Ratapani Wildlife Sanctuary**

- It is located in Vindhya Range.

- The sanctuary is spread over 890 sq km in Bhopal-Raisen forest division of Madhya Pradesh.
- The area of about 3,500 sq km of Raisen, Sehore and Bhopal districts has been reserved for tigers.
- This sanctuary has been declared as a tiger reserve aimed at better conservation of tigers in the area which is facing the problem of illegal mining and poaching.

## 6. Typhoon Phanfone

### Why in News?

- Typhoon Phanfone, also known as **Ursula**, struck the Philippines, bringing heavy rains in the central Philippines.
- The Philippines is the first major landmass facing the pacific cyclone belt

### Tropical Cyclone

- Cyclone is the formation of a very low-pressure system with very high-speed winds revolving around it.
- Factors like wind speed, wind direction, temperature and humidity contribute to the development of cyclones.
- **Cyclones** are called '**Hurricanes**' in the **North Atlantic and Eastern Pacific**, '**Typhoons**' in **South-East Asia and China** and '**Tropical Cyclones**' in the **South-West Pacific and Indian Ocean Region**.

## 7. Carbon Dots Help Detect Herbicide Pollution

### Why in News?

Recently, researchers from Assam have used the commonly found invasive plant **water hyacinth** to produce carbon nanoparticles.

- These carbon nanoparticles can be used for detecting a commonly used **herbicide- pretilachlor**.
- **Carbon dots or nanodots** are nanoparticles which is **less than 10 nanometre**.

### Carbon Dot and its Functioning

- The team harvested water hyacinth leaves, removed the chlorophyll, dried and powdered it.
- The sieved powder was heated at 150° C to convert it to carbon dots.
- Carbon dots give a green fluorescence under UV light due to the presence of the extremely small oxygen functional groups on the surface of the dots.
- The fluorescence intensity increases in the presence of the herbicide.



- Carbon dot is extremely sensitive to pretilachlor and could detect even very small quantity of the herbicide.
- **Advantages:**
  - This will be a commercially viable option when compared with the sensors currently available in the market.
  - The raw material for the construction of the sensor, that is, the water hyacinth, is readily available and is practically a waste material.

### About Water Hyacinth

- Water hyacinth is a free-floating aquatic plant **native to South America**. It is considered as an **invasive alien species**.
- Single plant of Water Hyacinth is **capable of duplicating itself** every nine days.
- It is also referred to as the **terror of Bengal**- given its effect on the local ecology and lives of the people.
- It has an effect on irrigation, hydroelectric generation and navigation.
- It also leads to a drastic reduction in fish production, aquatic crops and an increase in diseases caused by mosquitoes.

### Types of Nanoparticles

- **Carbon-Based Nanoparticles:** They include two main materials: carbon nanotubes (CNTs) and fullerenes.
  - CNTs are graphene sheets rolled into a tube.
  - Fullerenes are allotropes of carbon having a structure of hollow cage of sixty or more carbon atoms.
- **Ceramic Nanoparticles:** These are inorganic solids made up of oxides, carbides, carbonates and phosphates.
- **Metal Nanoparticles:** They are prepared from metal precursors and can be synthesized by chemical, electrochemical, or photochemical methods.
- **Semiconductor Nanoparticles:** They have properties like those of metals and non-metals.
- **Polymeric Nanoparticles:** They are organic based nanoparticles.
- **Lipid-Based Nanoparticles:** It consists of a solid core made of lipid and a matrix containing soluble lipophilic molecules.

### 8. Bar-headed Goose

#### Why in News?

- A six-member team attached to Pathanamthitta Birders has spotted the Bar-headed goose (*Anser Indicus*) in the wetlands of Karingali Pancha, near Pandalam, Kerala.
- In general large flocks visit the koonthankulam bird sanctuary at Tirunelveli in Tamil Nadu. It is very rare that bird is spotted in Kerala.

### **Bar-headed Goose**

- **Habitat**- Central China and Mongolia.
- They are one of the birds which can fly even at very high altitude.
- They come to India and return to their homes by crossing the Himalayan ranges - one of the most high-altitude migrations in the world.
- The capacity of bar-headed goose to transport and consume oxygen at high rates in hypoxia distinguishes this species from similar lowland waterfowl.
- **IUCN Status:** Least Concern

### **9. Chillai Kalan**

#### **Why in News?**

The traditional 40-day long period of extreme cold in Kashmir, Chillai-Kalan, began on December 21 and will continue till January 31 followed by **Chillai-Khurd** and **Chillai-Bachha**.

#### **About Chillai-Kalan**

- Chillai-Kalan period is known for sub-zero temperatures, frozen lakes, rivers and streams.
- As per India Meteorological Department (IMD), the period mostly remains wet as the upper part of the Kashmir Valley receives heavy snowfall and the minimum temperature drops considerably.
- **Chillai-Khurd (small cold)** is a 20-day long period which starts from January 31 to February 19.
- **Chillai-Bachha (baby cold)** is a 10-day long period which occurs between February 20 and March 2.

### **India Meteorological Department**

- It was established in 1875 as an agency of the **Ministry of Earth Sciences** of the Government of India.
- It is the principal agency responsible for:
  - Meteorological observations
  - Weather forecasting
  - Seismology

### **10. Deocha Pachami Coal Black Zone**

#### **Why in News?**

Recently, West Bengal Chief Minister said that her government will start work in certain areas on the Deocha Pachami Dewangunj-Harinsingha coal block project.



### About Deocha Pachami Coal Block

- Deocha Pachami coal block of Birbhum Coalfield Area is World's Second Largest Coal Block situated in West Bengal.
- The block has an estimated 2,102 million tonnes of coal and is spread across 9.7 km.
- This coal mine is the largest coal mine or coal block in Asia, due to the number of coal reserves.
- It is the newest coal mine in West Bengal.



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