UPSC Daily Current Affairs | Prelim Bits 06-06-2024

Conservation Breeding Programme (CBP)

Recently, the Indira Gandhi Zoological Park (IGZP) has emerged at the forefront of wildlife conservation efforts in India.

- **CBP** – A science of conserving a species by preventing imminent population collapse in the wild due to a large number of eliminative pressures.
    - **For instance:** Habitat loss, habitat fragmentation, industrialization, poaching, illegal trade, climate change etc.
- **Aim** – To *conserve the genetic diversity* of the species and *restock or reintroduce* the species to re-establish self-sustaining population in its natural wild habitat.
- **Joint initiative of** – In-situ and ex-situ wildlife managers.
- The Chief Wild Life Wardens and protected area managers were asked to identify the species which need immediate intervention.
- **Role of Zoo** – To conserving a species through ex–situ CBP.
- **Zoo species** – They should be *used for display*, *used as insurance* for the use in future to complement and supplement the in-situ population when the species got extinct from wild.
- They can used as *education tools* for the public to spread the awareness for the conservation of these endangered species.

***Ex-situ' conservation** is that the individuals of species are maintained in off exhibit under different selection pressure that those in natural conditions in a natural habitat till they are release in wild.*

- **Facilities** – It can be either an *off displays Conservation Breeding centre* (if appropriate land is available in the Zoo compound) or in the form of *satellite facility* will be created only in one (coordinating Zoo) to two Zoos of the region.

Conservation Breeding Programme in IGZP

- **IGZP** – Indira Gandhi Zoological Park
- **Located in** – Visakhapatnam.
- It is recognized by the Central Zoo Authority (CZA) for CBP.

IGZP is also the only zoo in India that is responsible for creating off-display conservation breeding centres (CBCs).

- **Conservation of Striped hyenas** – It is one of the 3 hyena species in the world which are threatened by habitat loss, human-wildlife conflict, poaching, and illegal wildlife trade.
    - **IUCN Red list** – Near threatened
    - **Wildlife Protection Act, 1972:** Schedule I

- It involves protection, education and awareness programmes.
- They also established a protocol of hand rearing of hyena cubs before being released back into the enclosure.
- **Conservation of Asiatic wild dogs** – Once widespread across southern & eastern Asia, now scattered in localised areas of India and Thailand.
    - **Threats** – Habitat loss, declining prey base and disease.
    - **IUCN status** – Endangered
    - **Wildlife Protection Act, 1972 -** Schedule II
    - **CITES** - Appendix II
- **Soft release** – A pack will be released in an invisible cage spread over a large area and after a behavioural study of the pack, it will be slowly released in the wild.
- **Significance** – It has given fillip to IGZP's animal-exchange programme with other zoos in India.
- **Other conserved species in IGZP** – Indian grey wolf, ring-tailed lemur, Indian bison, blue and gold macaw, jungle cat and eclectus parrot.

Reference

1. The Hindu| Success of Conservation Breeding Programme in IGZP
2. CZA| Conservation Breeding Programme (CBP)

Colombo Process

Recently, India has assumed the chair of the regional grouping Colombo Process for ***2024-26.***

- **About** – It is a Regional Consultative Process of migrant worker origin countries from *South and South East Asia.*
- **Objectives** – To provide a forum for ***Asian countries of origin*** of temporary contractual workers
    - To *share experiences*, lessons learned and best practices on overseas contractual employment.
    - To discuss and *propose practical solutions* for overseas workers particularly the most vulnerable ones.
    - To optimize benefits from organized overseas employment, and enhance *dialogue with countries of destination*.
    - To *review and monitor the implementation* of ministerial recommendations and identify further steps for action.
- **12 Members** – China, Cambodia, India, Indonesia, Afghanistan, Bangladesh, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, and Vietnam.

India has become chair of regional grouping Colombo Process for the first time since its inception in 2003.

- **Technical support and secretariat by –** The International Organization for Migration (IOM).

The ***International Organization for Migration*** *(IOM), established in 1951 is a United Nations organization working in the field of migration.*

- **Administration –** They are coordinated through the permanent Missions of Member States at the UN in Geneva.
- Governed by – Ministerial Consultations (representation from member states).
- The *decision-making is by consensus* but it is *not binding* on the members.
- **3 themes** – Protection of and provision of services to temporary overseas contractual workers.
- Optimizing benefits of organized labour mobility.
- Capacity building, data collection and inter-state cooperation.

References

1. The Indian Express | India chairs Colombo Process
2. IMO| Colombo Process

World Environment Day

The 2024 World Environment Day was hosted in the West Asia region, marking the 2nd time in more than 50 years.

- It is the largest global platform for environmental public outreach and is celebrated by millions of people across the world.
- **Celebrated on** – ***June 5th, annually***.
- **Started in** – ***1973*.**
- **Led by** – The *United Nations Environment Programme (UNEP).*

UNEP *is the leading global voice on the environment. It inspires, informs and enable nations and peoples to improve their quality of life without compromising that of future generations.*

- **World Environment Day 2024 –** It is hosted *by Saudi Arabia*.
- **Focus on** – ***Land restoration***, ***desertification***, and ***drought resilience***.
- Land restoration is a key pillar of the UN Decade on Ecosystem Restoration (2021-2030).
- **Aim –** To support accelerated progress on global commitments, which include *protecting 30% of land and sea* for nature and *restoring 30%* of the planet's degraded ecosystems.

While countries have promised to restore 1 billion hectares of land by 2030, current trends suggest 1.5 billion hectares would need to be restored to meet the 2030 land degradation neutrality goals.

- **Activities** – 6 new cities stretching from Africa to Latin America joined UNEP's *Generation Restoration Cities*, an initiative for catalysing a nature-based transformation in finance, jobs and cities.

Generation Restoration project *(2023-25) of UNEP, aims to address selected political, technical, financial challenges to promote restoration at scale, particularly in urban areas.*

Environmental concerns
• **Current concerns** – Up to 40% of the world's land is already degraded, directly affecting 50% of humanity. • An estimated 3.2 billion people worldwide are negatively impacted by *desertification*. • By 2050, more than three-quarters of the world's population is expected to be affected by *droughts*. • **Future challenges –** Exposure to *air pollution* is projected to increase by 50% within the next decade. • *Plastic waste* entering aquatic ecosystems will nearly triple by 2040.

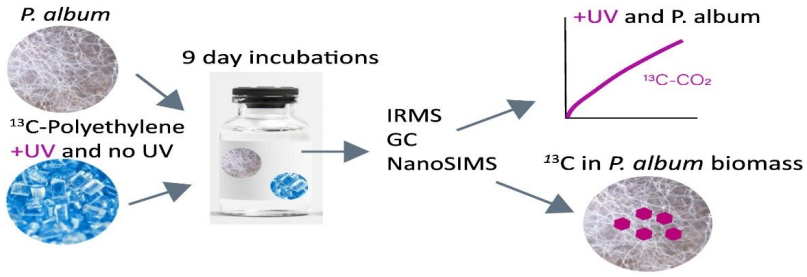
Reference

The United Nations | World Environment Day

Parengyodontium Album

A study identifies fungus that breaks down ocean plastic.

- **Taxonomy** – It is a *marine fungus*.
- **Growing Conditions** – It lives together with other marine microbes in thin layers on plastic litter in the ocean.
- **Degrade plastics** - It is capable of *mineralizating UV-treated polyethylene (PE)* into CO2 and this PE-derived carbon is converted ***into fungal biomass*** that serves as its energy.
- It uses UV radiations from the sunlight to initiate the photo degradation of PE.



Polyethylene is the most abundant of all plastics that have ended up in the ocean.

- **Significance** – It will join the list of plastic-degrading marine fungi, which hitherto were only 4 species.
- Both bacteria and fungi are known to degrade plastic.

Fungus

- **Taxonomy** – They are under the *Kingdom Fungi*.
- **Species** – It includes the *yeasts, rusts, smuts, mildews, molds, and mushrooms*.
    - Slime molds and oomycetes (water molds), that do not belong to kingdom Fungi but are often called fungi.

- **Habitat** – Many are free-living in soil or water while others form parasitic or symbiotic relationships with plants or animals.
- **Features** – They are eukaryotic organisms, whose cells contain membrane-bound organelles with a clearly defined nuclei.
- **Decomposers** – They decompose the living matter around them and then feed on it.

Reference

Physics Org| Marine Fungi degrade Plastic Polyethylene (PE)

Impacts of Herbicide-Tolerant Rice

The Indian Council of Agricultural Research (ICAR's) herbicide-tolerant rice is not farmer-friendly and is a threat to national food security.

- **Herbicide-tolerant crops** – They are the crops which have the inherent ability to *survive and reproduce after herbicide application* that would kill a normal population of the same species.
- **Need** – Weeds are a major biological constraint in rice production, causing losses ranging from 30-100 per cent.
    - **Herbicides** – They are chemicals substances used to control undesired plants, also known as weeds.
- **Issue** – ICAR has *commercialised herbicide-tolerant (Ht) basmati rice* varieties and also promoted *direct application of herbicide 'Imazethapyr'* in direct seeded rice (DSR).

> ***Imazethapyr*** *only kills certain types of broadleaf weeds (BLW). Globally, the herbicides is recommended for soybean and pulse crops, but not for rice crops due to the different weed flora.*

- **Impacts** – Ht rice will *not favour the genetic diversity* of Indian rice as it will monopolise in favour of specific varieties of seed.
- It will *raise the cultivation costs*.
- It may also lead to more *herbicide-resistant weeds* in the future, endangering rice production.
- **Eco-friendly weeding method** – *Advancing the date of sowing* to May 15-June 10 and *hand weeding* at 20 and 40 days after DSR sowing is more effective for weed control and higher seed yield.

Direct Seeded Rice (DSR)
• It is a modern agricultural technique where rice seeds are sown directly into the field without the need for transplanting seedlings. • **Advantages** – It s*aves about 40% of groundwater irrigation and cultivation costs*, with savings in energy consumption (electricity, diesel, manpower, etc) *without any loss of seed yield* compared to water-guzzling transplanted rice.

Reference

Down To Earth| Herbicide Tolerant Rice threat Food Security



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