



## Invasive Alien Species

**For Prelims:** [Invasive Alien Species](#), [Biodiversity](#), [Water hyacinth](#), [Kunming-Montreal Global Biodiversity Framework](#), [Convention on Biological Diversity](#), [Convention on the Conservation of Migratory Species](#), [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#).

**For Mains:** Factors Responsible for Rising Invasive Species and their Impacts

**Source:** [IE](#)

### Why in News?

The [Intergovernmental Platform on Biodiversity and Ecosystem Services \(IPBES\)](#) has recently released an "**Assessment Report on [Invasive Alien Species](#) and their Control.**"

- This comprehensive study sheds light on the **alarming proliferation of invasive alien species worldwide** and their **devastating impact on global [biodiversity](#)**.

### What are the Major Highlights of the Report?

- **The scale of the Problem of Invasion of Alien Species:**
  - The report reveals the **presence of approximately 37,000 alien species**, introduced by **human activities**, across various regions and biomes.
  - Of these, more than **3,500 are classified as invasive alien species**, posing severe threats to local ecosystems.
    - About **6% of alien plants, 22% of alien invertebrates, 14% of alien vertebrates**, and 11% of alien microbes are known to be invasive.
- **Leading Invasive Species:**
  - The [water hyacinth](#) ranks as the **world's most widespread invasive alien species on land**.
  - **Lantana, a flowering shrub**, and the **black rat** hold the second and third positions on the global invasion scale.
  - The **brown rat and house mouse** are also widespread invaders.
- **Perceived Benefits vs. Negative Impacts:**
  - Many invasive alien species were intentionally introduced for perceived benefits in sectors such as **forestry, agriculture, horticulture, aquaculture, and as pets**.
  - However, their **negative impacts on biodiversity and local ecosystems** were often not considered.
    - Invasive alien species have played a **significant role in 60% of documented global plant and animal extinctions**.
    - These species are now recognized as **one of the five primary drivers of biodiversity loss**, alongside **land and sea use change, direct exploitation of organisms, climate change, and pollution**.
    - **Nearly 80% of the documented impacts of invasive species** on nature's contribution to people **are negative**.

- **Regional Distribution: 34% of the impacts of biological invasions were reported from the Americas**, 31% from Europe and Central Asia, 25% from Asia and the Pacific, and about 7% from Africa.
  - The majority of negative impacts occur on land, especially in forests, woodlands, and cultivated areas.
  - **Invasive alien species are most damaging on islands.** On more than 25% of all islands, the number of alien plants now exceeds the native plants.
  - 85% of the impacts of biological invasions on native species are negative.

## What are Invasive Alien Species?

- **About:**
  - Invasive alien species, also known as **invasive exotic species or non-native species**, refer to organisms that have been introduced to regions or ecosystems outside of their native range and **have established self-sustaining populations**.
  - These species often **outcompete native species** and **disrupt the balance of ecosystems**, leading to a range of negative impacts.
- **Factors Responsible for Rising Invasive Species:**
  - **Globalization of Trade and Travel:** Increased international trade and travel have facilitated the **unintentional movement of species across borders**.
    - **Cargo ships, airplanes, and vehicles** can inadvertently carry invasive species within **cargo, through [ballast water](#), or attached to their surfaces**, facilitating their unintentional spread.
      - Introduced to Australia in the late 1800s via **shipwrecks and the pearling industry**, the **Black Rat is regarded as one of the "World's Worst" invasive species** by the [IUCN](#).
  - **Climate Change:** Elevated temperatures and shifts in precipitation patterns promote **environments conducive to the colonization and proliferation of invasive species**.
    - **Shifts in the timing of seasons can disrupt the life cycles of native species**, making them more susceptible to invasive competitors and predators.
  - **Human Introduction of Exotic Species:** Deliberate introduction of non-native species for purposes like **gardening, landscaping, and pest control** can lead to invasions when these species escape cultivation.
- **Impacts of Invasive Alien Species:**
  - **Ecological Impacts:** Invasive species can outcompete native species for resources such as **food, water, and habitat**, leading to a decline or extinction of native species.
    - Some invasive species may become **predators of native species**, causing declines in prey populations.
    - These disruptions can have far-reaching consequences for ecosystem stability and resilience.
  - **Economic Impacts:** The annual costs of invasive alien species have **quadrupled every decade since 1970**. In 2019, the global economic cost of these species exceeded a staggering **USD 423 billion annually**.
    - Species like **Zebra mussels can clog water pipes and infrastructure**, leading to expensive repairs and maintenance.
  - **Impact on Food Supply:** The reduction of food supply is the most common consequence of alien invasive species.
    - Examples include the **Caribbean false mussel damaging fisheries in Kerala**.
  - **Health Implications:** Invasive species like **Aedes albopictus and Aedes Aegyptii** spread diseases like **malaria, Zika, and West Nile Fever**, impacting human health.
    - **Water hyacinth in Lake Victoria** led to the depletion of **tilapia(fish)**, impacting local fisheries.
- **International Instruments and Programmes on Invasive Species:**
  - **[Kunming-Montreal Global Biodiversity Framework \(2022\)](#):** Governments have committed to reducing the rate of introduction and establishment of invasive alien species **by at least 50% by 2030**.
  - **[Convention on Biological Diversity \(CBD - 1992\)](#):** Adopted at the **1992 Earth Summit in Rio de Janeiro**, it recognizes invasive alien species as a major threat to the environment, second only to habitat destruction.

- [Convention on the Conservation of Migratory Species \(CMS - 1979\)](#): This intergovernmental treaty aims to **conserve migratory species** and includes measures to control or eliminate invasive alien species already present.
- [Convention on International Trade in Endangered Species of Wild Fauna and Flora \(CITES - 1975\)](#): Focuses on ensuring **international trade does not threaten the survival of wild animals and plants**; it also considers the impact of invasive species involved in trade.

### UPSC Civil Services Examination Previous Year Question (PYQ)

**Q. With reference to the International Union for Conservation of Nature and Natural Resources (IUCN) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which of the following statements is/are correct? (2015)**

1. IUCN is an organ of the United Nations and CITES is an international agreement between governments.
2. IUCN runs thousands of field projects around the world to better manage natural environments.
3. CITES is legally binding on the States that have joined it, but this Convention does not take the place of national laws.

**Select the correct answer using the code given below:**

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans: (b)**

PDF Reference URL: <https://www.drishtiias.com/printpdf/invasive-alien-species>