

Invasive alien fauna in INDIA

➤ Invasive alien species

Aliens are species that occur outside their natural range. Alien species that threaten native plants and animals or other aspects of biodiversity are called alien invasive species. They occur in all groups of plants and animals, as competitors, predators, pathogens and parasites, and they have invaded almost every type of native ecosystem,

➤ Why do we care?

Biological invasion by alien species is now recognised as one of the major threats to native species and ecosystems. The effects on biodiversity are enormous and often irreversible.

A new invasive gall forming insect of *Eucalyptus* in Southern India

Leptocybe invasa Fisher & La Salle- a new insect pest was detected in 2002 from a few pockets in coastal Tamil Nadu and now it has spread to peninsular India. It is a tiny wasp that forms leaf and stem galls in *Eucalyptus* seedlings and trees up to two years of age. The pest has affected more than 20,000 hectares of *Eucalyptus* plantations in Tamil Nadu, Andhra Pradesh, Karnataka and Kerala. Eucalypts are extensively cultivated in India by wood based industries, Forest Development Corporations and tree farmers and the wood is mostly consumed for manufacture of pulp, paper and rayon. Control measures suggested are among classical biological control, wherein the natural enemies are introduced to control a pest may be an ideal solution as well as application of granular insecticides in nursery, standardization of sticky traps with different colours to trap the adult rather than controlling the larvae.



Branch with infested petiole and midrib

➤ Invasion and Species Richness?

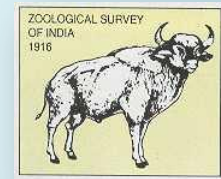
Over 120,000 non-native species of plants, animals and microbes have invaded just six countries- the US, UK, Australia, South Africa, Brazil and India. The invasions potentially lead to an increase in species richness, as invasive species are added to the existing species pool. but also leads to extinction of native species, resulting in decrease of species richness. The negative interactions is primarily the competition with natives for food and sustenance, which may not allow coexistence.

The Impact of Invasion is second only to that of human population growth and associated activities as they cause

- Loss of Biodiversity
- Decline of Native Species (Endemics).
- Habitat Loss
- Introduced pathogens reduce crop and stock yields
- Degradation of marine and freshwater ecosystems

This biological invasion constitutes the greatest threat to biodiversity, and it has already had devastating consequences for the planet and challenges for the conservation managers.

Golden Jubilee Celebration Year-2011



Southern Regional Centre

Zoological Survey of India
130 Santhome High Road
Chennai-600 028

A few Invasive alien fauna in INDIA

About 235 invasive alien species (including plants) are reported in India by Global Invasive Alien Species Database. Some examples of Invasive fauna in India are:

1. *Anoplolepis gracilipes* (Fr. Smith)

Common Name: Crazy ant



Impact info: High densities of the yellow crazy ant have the potential to devastate native 'keystone' species, resulting in a rapid alteration of ecosystem processes and negative effects on endemic species.

2. *Achatina fulica* Bowdich, 1822

Common Name: Giant African snail



Impact info: *Achatina fulica* is considered one of the worst snail pests of tropic and subtropic regions. While their small size limits the quantity of plant material consumed per animal the aggregated nature of the infestations can lead to severe damage in infested plants.

3. *Acridotheres tristis* (Linnaeus, 1766)

Common Name: Myna



Impact info: Flocks of the common myna are known to damage fruit crops, including grapes, apricots, apples, pears, strawberries, figs and gooseberries. Also pose a human health risk as they carry bird mites such as *Ornithonyssus bursa* and *Dermanyssus gallinae* that may infect humans. They can also cause dermatitis, asthma, severe irritation and rashes. Their droppings can spread Psittacosis, Ornithosis, Salmonellosis and arboviruses.

4. *Carassius auratus* (Linnaeus, 1758)

Common Name: Gold Fish



Impact Info: The passage of cyanobacteria through the goldfish intestine stimulates cyanobacterial growth, which may result in algal blooms occurring. Goldfish have also been known to prey upon the eggs, larvae and adult of native fishes, as well as increasing water turbidity and depleting aquatic vegetation.

5. *Columba livia* (Gmelin, 1789)

Common Name: Pigeon



Impact info: pigeons are known to transmit pigeon ornithosis, encephalitis, Exotic Newcastle Disease, cryptococcosis, toxoplasmosis, salmonella food poisoning, and several other diseases. Their nests are infested with ectoparasites, such as ticks, fleas, and mites, which can cause health problems for humans

6. *Equus asinus* Linnaeus, 1758

Common Name: Donkey



Impact info: They cause erosion and damage vegetation with their hard hoofs. They damage and foul waterholes, and introduce weeds through seeds carried in their dung, manes and tails. *E. asinus* may also compete for food and water with native animals. The impact of *E. asinus* on native grasses, herbs, shrubs and drinkable water is most pronounced during drought.

7. *Hemidactylus frenatus* Dumril and Bibron, 1836

Common Name: House Gecko



Impact info: The ability of *H. frenatus* to replace locally native gecko species seems most pronounced in urban areas. *H. frenatus* is very well adapted to predation on concentrations of insects that gather along building walls near artificial lighting, seemingly more so than most endemic gecko species.

8. *Oreochromis mossambicus* (Peters, 1852)

Common Name: Tilapia



Impact info: threat to native species through competition for food and nest space. Juveniles have been documented to feed on other fish.