

UPSC Civil Services Examination

UPSC Notes [GS-I]

Topic: Causes of biodiversity losses (Geography Notes for UPSC)

Causes of biodiversity losses

The accelerated rates of species extinctions that the world is facing now are largely due to human activities. There are four major causes

- Habitat loss and fragmentation
- Over-exploitation
- Alien species invasions
- Co-extinctions

Habitat loss and fragmentation

- Habitat loss and fragmentation is the most important cause of driving animals and plants to extinction.
- The most intense examples of habitat loss come from tropical rain forests.
- The Amazon rain forests protecting probably millions of species is being cut and cleared for agricultural purposes or for conversion to grasslands for raising beef cattle.
- In addition to the total loss, the degradation of several habitats by pollution also threatens the existence of many species.
- When large habitats are broken up into small fragments due to anthropogenic activities, mammals and birds necessitating large territories and certain animals with migratory habits are severely affected, leading to population regressions.

Over-exploitation

- Humans have always depended on nature for food and shelter, etc.
- The population explosion is the major reason for the over-exploitation of available resources.
- Many species extinctions in the last 500 years such as Steller's sea cow, passenger pigeon were due to overexploitation by humans.
- Currently, several marine fish populations around the world are over-harvested, threatening the sustained existence of certain commercially important species.

Alien species invasions

- When alien species are introduced by chance or deliberately, some of them turn aggressive and cause the extinction of local species.

- The Nile perch introduced into Lake Victoria in East Africa led ultimately to the extinction of a naturally unique group of more than 200 species of cichlids fish in the lake.
- The illegal introduction of the African catfish, *Clarias gariepinus* for aquaculture purposes is posing a danger to the local catfishes.

Co-extinctions

- When a species becomes extinct, the flora and fauna related to it in an essential way also become extinct.
- When a host fish species becomes extinct, its unique assemblage of parasites also meets the same destiny.

