Sixth Mass Extinction

An international team of scientists has published a way forward known as the **Global Deal for Nature (GDN)** to prevent the **sixth mass extinction on Earth.**

- GDN's mission is to save the diversity and abundance of life on the earth at the **cost of $100 billion a year.**
- The **three goals of the GDN** are to protect biodiversity by conserving at least 30% of the Earth's surface by 2030; mitigate climate change by conserving the Earth's natural carbon storehouses; and reduce major threats.
- The large-scale loss of species like the one we are currently witnessing have also happened earlier, even before humans appeared on the scene.
- During the long period (> 3 billion years) since the origin and diversification of life on earth there were five episodes of mass extinction of species. However the '**Sixth Extinction' presently in progress different from the previous episodes.**
    - The difference is in th**e rates;** the current species extinction rates are **estimated to be 100 to 1,000 times faster** than in the pre-human times and our activities are responsible for the faster rates.
    - Ecologists warn that if the present trends continue, **nearly half of all the species on earth** might be **wiped out within the next 100 years.**

History of Mass Extinction

Era	Impact and Possible Reasons
End Ordovician, 444 million years ago	• 86% of species lost • Severe ice age that lowered sea levels, possibly triggered by the uplift of the Appalachians. The newly exposed silicate rock sucked CO2 out of the atmosphere, chilling the planet.

Late Devonian, 375 million years ago	• 75% of species lost • With the emergence of land plants, their deep roots stirred up the earth, releasing nutrients into the ocean. This might have triggered algal blooms which sucked oxygen out of the water, suffocating bottom dwellers like the trilobites.
End Permian, 251 million years ago	• 96% of species lost • A cataclysmic eruption near Siberia blasted CO2 into the atmosphere. Methanogenic bacteria responded by belching out methane, a potent greenhouse gas. Global temperatures surged while oceans acidified and stagnated, belching poisonous hydrogen sulfide.
End Triassic, 200 million years ago	• 80% of species lost • No clear causes have been found.
End Cretaceous, 66 million years ago	• 76% of all species lost • volcanic activity and climate change along with asteroid species

All About Mass Extinction

- **What has gone wrong**

  Increased human foot-print has resulted in habitat loss, overhunting and overfishing, the introduction of invasive species into new ecosystems, toxic pollution, and climate change.

  populations of vertebrates have fallen by an average of 60 percent since 1970.
- **How many species are already extinct?**

  Out of Vertebrate species at least 338 have gone extinct, with the number rising to 617 when one includes those species "extinct in the wild" and "possibly extinct.
  - Recent vertebrate extinctions in the wild include the northern white rhino, which lost its last male member in 2018, and Spix's macaw, a blue parrot native to Brazil.
  - 99 percent of Earth's species are invertebrates, and 40 percent of the species known to have died off.
- **How many species are endangered?**

  There are 26,500 species threatened with extinction, according to the International Union for Conservation of Nature (IUCN).

    - This includes 40 percent of amphibian species, 33 percent of reef-building corals, 25 percent of mammals, and 14 percent of birds.
    - Since 1993,only 43% of African Lion are left. The number for cheetah is only 7000 and that of Amur leopard is just 100.
- **What are the consequences?**

  The loss of species can have catastrophic effects on the food chain on which humanity depends. Ocean reefs, which sustain more than 25 percent of marine life, have declined by 50 percent already — and could be lost altogether by 2050. This is almost certainly contributing to the decline of global marine life, down — on average — by 50 percent since 1970.

  In general, loss of biodiversity in a region may lead to (a) decline in plant production, (b) lowered resistance to environmental perturbations such as drought and (c) increased variability in certain ecosystem processes such as plant productivity, water use, and pest and disease cycles