

The future of the Planet - Pollution & Climate Change

Is the planet's health failing?

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- The population of vertebrate species on Earth in the wild saw a dramatic fall of about 30% between 1970 and 2006.

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- This is due to destruction and degradation of natural habitats.

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- The freshwater ecosystems in the tropics are the worst affected.

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- The ecological footprint of humanity currently far exceeds the biological capacity of the earth to replenish it.

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What are the epochs that modern humanity has seen?

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- Epoch is a geological time period that has a characteristic climate, life forms and other planetary features of its own. Ex: Jurassic

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- **Holocene** - For 12,000 after the last ice age, the Holocene epoch has offered a stable climate.

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- This was a period of grace for humanity to grow and flourish, with settlements, agriculture and lately economic and population expansion.

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- **Anthropocene** - Holocene has since morphed to a new epoch called anthropocene, the beginnings of which are being debated.

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- This epoch is marked by over-reliance on fossil fuels.

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- It also is an era of high industrial pollution, warming up of the planet and loss

of species.

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- Anthropocene has thus been defined as an age in which human activities will produce a significant impact on the planet's health.

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Is a catastrophic collapse of the planet possible?

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- Many of the planet's systems respond in a non-linear manner and hence we usually don't see immediate proportional reactions to pollution, degradation and climate change.

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- Some systems tend to see a sudden collapse if particular threshold levels are breached.

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- When ecological tipping points are crossed, significant large-scale changes may occur - such as breakdown of glaciers, the loss of rainforests or failure of monsoons.

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- Since systems interact with one another, crossing a threshold in one domain can influence another.

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- For instance, greenhouse gas (GHG) emissions increase ocean acidification and land-use change often increases GHG emissions.

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- Humans haven't yet understood many of these systems in detail and hence a sudden collapse is very much possible.

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- Some experts opine that we are already at critical levels of concern for climate change, fresh water, species biodiversity and changes to nitrogen and phosphorus cycles.

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How can the future be best approached?

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- Identifying interlinkages between biophysical planetary boundaries and development is essential to keeping the world safe by initiating

transformative changes.

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- While the future looks gloomy, the best we can do is to recognize sustainability as indispensable for survival and work towards the ideals framed in the 1992 Rio-Earth summit.

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Source: The Hindu

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