

FACTORS TO CHANGING ECOSYSTEM

Shreyanshi Chaudhary
Rajdhani College, University of Delhi

An ecologist, Tansley, depicted the unit Ecosystem in 1935 as an Ecosystem is a self-regulating group of biotic communities of species interacting with one another and with their non-living environment exchanging energy and matter. The ecosystem of Earth has been significantly changing due to human actions usually in the last 50 years and the fluctuation is fastest in the emerging countries. The balance of the ecosystem depends on four factors: the water cycle, energy flow, mineral cycle, and community dynamics. The disturbance in an ecosystem could be favorable or unfavorable. The disruption facilitates a rise in the succession cycle. However, if the disturbance becomes repeated, it immediately impacts the ecosystem's ability to regenerate and execute the basic ecosystem procedure.

SOME COMMON FACTORS CAUSING ECOSYSTEM CHANGE

Biotic and Abiotic factors affect the changing of the ecosystem. Biotic factors such as plants and animals and their dealings such as grazing and predation, etc. Abiotic factors include light, temperature, atmospheric pressure, humidity, wind, salinity, and acidity. Along with it, Human activities such as pollution and destruction of natural habitats are also the major factor. Climate change can also affect the ecosystem by reducing the availability of water, increasing temperature extremes, and increasing the occurrence and intensity of flood events, wildfires, and destructive storm patterns. Direct driver and indirect driver are the leading aspects that cause a change in an ecosystem due to natural or human-induced factors. A direct driver is the habitat change that influences ecosystem processes. On the other hand, an indirect driver is a change in the human population, which operates more diffusely, by altering one or more direct drivers.

IMPACT OF DIRECT DRIVERS ON ECOSYSTEM

Over the last 40 years, the most considerable direct driver which directs to the ecosystem change in the terrestrial, freshwater, and Marine

the ecosystem was loaded with excessive nutrients. The accumulation of excessive nutrients has both beneficial effects and contrary effects. Under beneficial consequences crop productivity is risen which will ultimately reach up plateau as more nutrients are added on the other hand eutrophication of coastal waters was done which seems to be an adverse effect and its harmful effects will continue to grow. The world consumption of nitrogenous fertilizers boosted from 10.8 million tonnes to 85.1 million tonnes from 1960 to 2003 and more than half percent of these nitrogenous fertilizers were lost to the environment due to the improper application technique. Excessive flow of Nitrogen contributes to eutrophication of freshwater and coastal marine ecosystems, acidification of freshwater and terrestrial ecosystems. Also, it leads to the production of ground-level ozone and the destruction of ozone in the stratosphere.

In the last 100 years, human activity has caused between 50 to 1000 times more extinctions than natural processes would have created.



Furthermore, it results in climate change also. Earth's climate has altered since the pre-industrial era and will continue to change throughout the 21st century. During the last 10 decades, the global temperature of the earth has increased by about 0.6 Celsius and the average sea level rose by 0.1 to 0.2 meters. Climate change is especially in warmer regions has affected the biological system in many parts of the world

IMPACT OF INDIRECT DRIVERS ON ECOSYSTEM

As people are moving towards urban settlement, so this has significantly lessened the pressure on some ecosystems which also leads to the reforestation of some parts of industrial countries that had been deforested in previous centuries. Consumption of ecosystem ceremonies is gradually being decoupled from the financial growth. Global trade enhances the impact of regime supervision practices on the ecosystem and their services, enhancing good practices but worsening the damage caused by poor practices.



A 416-part-per-million concentration

The amount of carbon dioxide (CO₂) in our atmosphere has reached its highest level in human history as of July 2021.

The year 2020 was quite hot.

Global temperatures in 2020 were 1.76 degrees Fahrenheit (0.98 degrees Celsius) higher than the 20th century average, making it the second-hottest year on record, according to NOAA. In fact, the seven warmest years between 1880 and 2020 have all occurred since 2014.

Nature has yet to be discovered as a solution.

Tropical forests are extraordinarily efficient at storing carbon, accounting for as least a third of the mitigation needed to avert the worst-case climate change scenarios. On the other hand, solutions that are based on nature are preferred.

The hottest month on record was July 2021.

According to the National Oceanic and Atmospheric Administration (NOAA), worldwide temperatures in July 2021 were higher than any other July on record, making it the world's hottest month since records began in 1880.

There are 800 million people in the world.

Droughts, floods, heat waves, extreme weather events, and sea-level rise are all repercussions of climate change that affect 11% of the world's population.

