

Assignment - 1

Impact of human activities on Ecosystem

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Human activities have had an impact on some of the Earth's components, such as biodiversity, ecosystems, and natural cycles.

1. Impact of human activities on different components of the ecosystem

Human activities can have a direct or indirect impact on our ecosystem, and as a result, tangible changes in the environment can be noticed. Although the ecosystem contains many components, some of the elements that are essential in the ecosystem where the impact of human activities can be noticed are:

Impact on Climate change :

- Climate change is a long term change in weather patterns and humans are also responsible for climate change.
- From human action, the climate has changed due to greenhouse gas production such as (CO₂), HFCs, methane and nitrous oxide. Greenhouse gasses trap solar heat as it flows through the Earth's atmosphere . However, over time, more human activity has added greenhouse gasses to the atmosphere, creating a massive heat trap.
- The current changes in global climate may be attributed mostly to human acts (such as the usage of fossil fuels) that contribute to global warming. With these components, the influence of climate change is noticed at the global and regional levels with an abrupt shift in temperature, humidity, and other parameters.

Pollution:

- Many human activities that affect pollution such as air pollution and water pollution.
- The emission of dangerous substances that contribute to air pollution in our ecosystem, and it can be difficult to determine which pollutants are linked to particular impacts on the environment or public health, it is widely understood that air pollution can create public health issues as well as harm to plant and animal life.
- Human waste such as industrial pollutants, human waste and other chemicals waste that and others that harm soil or rivers. These pollutants may have devastating impacts on the natural world, causing

environmental degradation and issues such as acid rain and destructive algal blooms in the ocean.

Habitat loss:

- Habitat loss refers to the loss of liveable space and resources within an ecosystem as a result of numerous reasons such as resource over-consumption. The major example is the loss of forest land as a result of deforestation.
- The archetypal picture of habitat devastation is a bulldozer tearing down trees. Filling up marshes, dredging rivers, mowing fields, and chopping down trees are all examples of direct habitat destruction.

2. Impact of human activities on the natural cycles

Impact on Carbon Cycle :

- The carbon cycle is concerned with the presence of carbon in nature. This also helps in the regulation of balance in other natural phenomena such as global temperature regulation and photosynthesis. The issue develops when an imbalance is developed, which might result in the addition or removal of carbon in nature.
- Human actions such as burning of biofuel, fossil fuels, and deforestation, would result in the addition of CO₂ cycle.
- The major impact on the carbon cycle is due to the burning of fossil fuels. The return of carbon to the atmosphere as carbon dioxide is happening hundreds to thousands of times quicker than it took to bury it, and far faster than the carbon cycle can remove it.

Impact on Nitrogen Cycle:

- Nitrogen is a critical factor in the composition, variety, dynamics, and operation of many terrestrial, freshwater, and marine ecosystems.
- The increment of greenhouse gas N₂O and other oxide of the Nitrogen in the atmosphere that affect the nitrogen cycle.
- The use of pesticides and chemical fertilizers in agriculture also affects the nitrogen cycle.

Impact on Water Cycle:

- The water cycle is the process through which water travels above, and on the earth's surface via evaporation, precipitation, condensation, infiltration, and surface runoff.
- Human actions like agriculture deforestation, removal of groundwater and abstraction of water from rivers and others has affected the water cycle .

3. Impact of human activities on biodiversity**Marine Life :**

- Humans produce large amounts of Toxic compounds,radioactive substances, plastics, explosives, high nutrient loads, and hydrocarbons. That goes into the ocean and affects marine life.

Agriculture :

- Due to increasing demand for agriculture more and more land is being converted into agricultural land due to this the original flora and fauna. That were present in that area are affected by this process, which has an impact on biodiversity for this reason.

Overexploitation of the species :

- The imbalance in the food chain and the food web of the species has been caused by hunting and species overexploitation, such as in wild catch fisheries and the wildlife trade. Invasive organisms and diseases can also be transmitted through trade and travel.

4. The adaptation strategies to reduce the severe impact

The influence of human activity on the ecosystem can be diminished in a variety of ways. I'll outline some of these methods below.

- We can cut back on plastic use. We may lessen the damaging consequences of human activity on the environment by using less plastic, as we are all aware of the negative effects that plastic has on the environment.
- By lowering the number of automobiles on the road and increasing the usage of public transportation, one may both reduce the pollution in the air and the quantity of greenhouse gas emissions that are released.

- Many of the elements that upset or create imbalances in natural cycles or activities are brought on by human actions that are either directly or indirectly tied to the utilization of natural resources. Therefore, a strategy must be developed that ensures both the sustainability of the present and future generations and the least possible disruption of all currently occurring natural phenomena.