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The Effects of Environmental Degradation on Human Health

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ABSTRACT

The health sector must consider how environmental degradation affects human health in order to design well-informed policy. A healthy ecosystem is essential for all living creatures. Pollution in the environment has a negative impact on humans, plants, and other living organisms. Environmental economics is a key focus of the green discussion. The environment is now inextricably linked to the economy. People's health suffers as a result of environmental deterioration. Urbanization, population expansion, intensified agriculture, increased energy use and transportation, climate change, and pollution from many sources are all contributing to this issue. Unhealthy environments provide health risks, resulting in a breach of health. Modern technology is the fundamental cause of environmental degradation, despite our pride in it. Degradation has negative effects for humans, plants, animals, and microbes. This study reviews research on reducing environmental risk, with an emphasis on human health.

Keywords: *Environmental Degradation, Deterioration, Health Hazards, Consequences, Health Economics.*

Introduction

Human existence is significantly influenced by the environment. It has a direct impact on people's health and well-being, whether they live in rural areas or metropolitan areas. Changes in the physical environment that have a substantial negative impact on the resilience, productivity, or composition of natural or managed eco systems, on the functioning of socioeconomic systems, or on human health and welfare have been identified as the potential negative effects of climate change. The reason, the habitat, and the plants and animals that live there all affect how much of an influence the environment has. One of the main causes of environmental deterioration is human activity. The domestic environment has been the main focus of these efforts, with the majority of the dangers being related to indoor and outdoor air pollution, as well as hazardous water, sanitation, and hygiene. They also included some of the traditional components of environmental health, such as exposures related to radiation, heavy metals, or jobs. These assessments are very helpful to public health professionals in figuring out the relative improvements in population health that can be made by changing these environmental factors. They do not, however, provide us information on the proportional relevance of eco system modification to human health since they specifically omitted the natural environment or eco system that cannot be sensibly manipulated as being beyond their purview.

Degradation of natural resources' quantity and quality is referred to as environmental pollution. The primary cause of environmental deterioration is a variety of human activities.

These have caused changes in the ecosystem that are now detrimental to all living things. Smoke from industries and automobiles contributes to air pollution by raising the concentration of harmful substances in the atmosphere. Another is sound pollution, which is mostly caused by loud speakers, cars, mills, etc. The ecology becomes unbalanced when natural resources are used excessively and are depleted. The main causes of declining environmental quality are overuse of natural resources, deforestation, excessive use of pesticides, chemical fertilizers, and insecticides, crowded housing or uncontrolled urbanization, industrialization, and the creation of litter, sewage, and other waste products. If the ecosystem continues to deteriorate in this manner, the lives of the species will be in jeopardy.

Global Change Caused by Human Activity

Human activity is causing significant and quick modifications to many of these restrictions. The preindustrial rate of nitrogen delivery to terrestrial ecosystems has more than quadrupled as a result of recent human activity (7). Approximately 90 to 140 Tg (teragrams) of Nyyr were fixed annually as part of the nitrogen's preindustrial terrestrial cycle (1, 7), with an extra 10 Tg of Nyyr coming via atmospheric N fixation by lightning. Currently, industrial fertilizer N fixation amounts to around 88 Tgyyr. Fossil fuel burning fixes about 20 Tgyyr of nitrogen, whereas legume crops fix around 40 Tgyyr. Furthermore, an extra 70 Tg of Nyyr are mobilized and released by human activities such as burning biomass and clearing land. Global food output is expected to quadruple by 2050 due to changes in diets that include more animal protein and the predicted growth of the world's population to around 9 billion people by that time (19). In that case, the preindustrial rate of anthropogenic terrestrial N imports would be around three to four times higher in 2050 (16, 19). Rivers would carry a large portion of this nitrogen to marine habitats close to the coast. Additionally, N would be atmospherically deposited on terrestrial nonagricultural ecosystems.

Positively charged ions like calcium are easily carried by nitrate when it leaches from soil. The eastern United States' hardwood woods may be losing calcium and other cations due to atmospheric N deposition (10). A region's formerly non-limiting elements may become limiting as a result of this base cation depletion. The pH and calcium levels in the soil often limit the range of plant species.

A ubiquitous agricultural fertilizer, phosphorus is now being applied at a pace that doubles the normal world rate for terrestrial ecosystems (8). Agricultural P fertilization is expected to more than treble by 2050. Aquatic environments, which may be P-limited, may absorb a large portion of this P.

Global climate change may result from the buildup of greenhouse gases like CO2 and methane, with temperate and polar ecosystems expected to see the most changes, particularly increased winter temperatures (e.g., ref. 2). We won't go into climate change and its possible effects on terrestrial ecosystems here since they have already been extensively researched. Instead, we only see that other facet of climate mean and variance, such as rainfall patterns, drought frequency and intensity, and other factors that limit plant groups, are also expected to shift. Furthermore, high CO2 levels indicate air eutrophication with a restricted plant resource, because CO2 is a food for plants.

One important factor influencing the species variety and composition of forests and grasslands is the frequency of fires (see, for example, ref. 14).

Due to habitat fragmentation, active fire control, and other human activities, the amount of land burnt annually in the United States has declined tenfold, from around 22 3 106 hayyr in 1930 to roughly 1.5 3 106 hayyr since 1960 (13). On the other hand, fire is becoming much more common in some environments, particularly tropical ones, where it is used as a tool for land management or clearance (59).

Both unintentional and intentional introductions of species to new biogeographic regions have significantly risen due to modern transportation and trade (11). For example, exotic plants make up over 25% of California's vascular plant species.

The second most common reason why native species in the US are categorized as endangered is exotic species (60). Exotic species can affect native species abundance in a variety of ways, such as through reducing competition, altering disease incidence or other trophic interactions, causing physical habitat changes like fire frequency, or altering nutrient cycles (61, 62). For example, local N fixation and, therefore, soil N fertility were significantly raised when the N-fixing Myrica fava invaded the Hawaiian Islands. After being released from N competition with native plants that were effective N consumers, additional alien species were able to proliferate due to the enhanced soil fertility (63).

By converting natural ecosystems into highways, power line rights-of-way, urban or suburban areas, or agricultural fields, human activity has also caused habitat fragmentation. As the world's population and per capita wealth rise, fragmentation is probably going to become worse. Destroying habitat may lead to the rapid extinction of species that were exclusive to the damaged region and the delayed extinction of species that are poorly dispersed but may be more competitive in existing ecosystems (64).

Lastly, apex predators—especially big carnivores—have less geographic ranges and populations as a result of human activity. Certain herbivores have become more abundant, their preferred plant species have become less abundant, and herbivore-resistant species have been released from competitive pressure as a result of decreased predator abundance in both aquatic and terrestrial habitats, which has affected the food chain (see, for example, refs. 65 and 66).

The composition, variety, and functioning of terrestrial and aquatic plant communities are all impacted by the many environmental restrictions that human activity is altering. These constraints, when combined with intraspecific and interspecific trade-offs, lead to the development of existing plant species. The set of criteria limiting the organization of many plant communities may, if present trends continue, fall beyond the range of values that prevailed both before to the industrial revolution and throughout the development of many plant species over the next 50 to 100 years.

Ecological Reactions to Change in the Environment

What effects may such modifications to environmental restrictions have on plant communities? The more immediate, or "ecological," reactions and the longer-term, or "evolutionary," responses—particularly patterns of speciation—are at opposite extremes of the spectrum, but there would be a continuum of responses. It is obvious that ecological and evolutionary reactions take place at the same time. Since speciation is the evolutionary response that most interests us and it occurs much more slowly than changes in species abundance, we separate them. The limitations and trade-offs that shaped a particular community and how they have evolved would determine the ecological responses. Let's examine the effects of increased N deposition in a scenario where competition for light and nitrogen (e.g., ref. 28) and dispersion limitation (25, 49) dictate the variety and composition of a plant community. This plant community would experience the same qualitative changes in reaction to increased N deposition as it would in response to modifications in any other environmental restriction.

Objective of the Study

The study's goal is to prevent environmental deterioration in order to save human health. The causes of environmental deterioration and the resulting effects on human health are examined in this article.

Research Methodology

The goal of this exploratory study is to clearly guide future empirical research. Secondary data was gathered for this purpose from websites, books, journals, magazines, newspapers, and conference proceedings.

Causes of Environmental Degradation

Modern urbanization, industrialization, population increase, deforestation, etc. are the main drivers of environmental pollution. Human disturbance is the main factor contributing to environmental deterioration. The primary source of the socioeconomic issue is population increase, which seems to be beneficial rather than detrimental to environmental equilibrium. The intricate relationship between poverty and the environment is really remarkable. Because the impoverished rely heavily on nature, a degraded environment might hasten the path of poverty. Degradation of the environment is also caused by pollution. Vehicle emissions, agricultural runoff, unintentional chemical releases from industry, and careless natural resource collection are just a few of the many causes of pollution. The biggest environmental health risk in the world is air pollution, which both causes and aggravates a variety of illnesses.

The main cause of water pollution is the contamination of freshwater sources, whether they are man-made or natural.

Impact of Human Health

Because of environmental deterioration, human health may suffer as a consequence of the environment. Depletion of the earth's natural resources causes the deterioration.

It is caused either directly or indirectly by people, including certain elements that alter the environment to suit societal demands. These variables have serious consequences, which worsen as the issue of human overpopulation arises. Similar to how transportation is the sector with the fastest-growing emissions, technology is often seen as inevitable for a number of reasons. Respiratory issues like asthma and pneumonia may arise in places where harmful air pollution are present. Vehicle pollution, industrial emissions, and automotive exhaust are the major causes of air pollutants, which include carbon dioxide, carbon monoxide, and nitrogen dioxide. Humans suffer when hazardous waste, industrial waste, pesticides, fertilizers, rubbish, and sewage are dumped into bodies of water. Pollution of soil and water often happens jointly. Water contaminates the soil by seeping into it. The repercussions of our destruction of the world are dire.

Mitigation Measures

Numerous strategies are being used to stop this, such as general protection initiatives and the preservation of natural resources. With careful planning, we must manage and restrict the human population. The primary cause of environmental deterioration is this.

Because of the detrimental consequences that pollution has on both the environment and human health, pollution avoidance is a significant worldwide issue. Never dump, run, drain, or land any solid, liquid, or gaseous anything that might pollute the air, water, or land. Future generations will live in a healthier and better environment if we take care of our resources, which will benefit us as well as ourselves.

Conclusion

One effect of human health is environmental deterioration. According to this article, among many other reasons, a degraded environment brought on by air and water pollution, greenhouse gas-induced climate change as a result of global warming, and many others constitutes a serious threat to human health. These may result in a rise in morbidity and early mortality. Maintaining a healthy environment is essential to safeguarding people's health. Human health is only one of the numerous ways that the environment influences people's lives. Reducing environmental degradation, or at least limiting it to a level that aligns with societal goals, should be our goal while determining the best ways to mitigate its issues. In order to maintain a healthy environment, governments must make every effort to guarantee that the actions of businesses, organizations, and people comply with environmental protection laws. Human health will be preserved if this is done.

For example, even if this cost dispersion ability is minimal, there would be particularly strong selection favoring individuals with higher competing capacity for light after N deposition. Such evolution would occur quickly until the genetic variety that was available for such features was eaten. It is improbable, nevertheless, that such species could quickly develop to match those in ecosystems with a lengthy evolutionary history of nitrogen-rich soils. Because of this, these more recent systems may eventually be vulnerable to invasion by these species, which often results in the eviction of the species that were developing there.

It is obvious that every concept we have covered is a speculative development of a few basic models of community assembly and organization. These models should be tested more thoroughly and their ecological and evolutionary consequences investigated in more detail.

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