

Problems for Conservation of Biodiversity and Resources

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SUMMARY

Changes in climate throughout our planet's history have, of course, altered life on Earth in the long run ecosystems have come and gone and species routinely go extinct. Deforestation is a direct cause of extinction and loss of biodiversity. An estimated 18 million acres of forest are lost each year, due in part to logging and other human practices, destroying the ecosystems on which many species depend. Overhunting, overfishing and over-harvesting contribute greatly to the loss of biodiversity, killing off numerous species over the past several hundred years. The introduction of non-native species into an ecosystem can threaten endemic wildlife (either as predators or competing for resources), affect human health and upset economies. While it may not necessarily cause extinction, pollutants do have the potential to influence species' habits. For example, acid rain, which is typically caused by the burning of fossil fuels, can acidify smaller bodies of water and soil, negatively affecting the species that live there by changing breeding and feeding habits. Ultimately, however, international governments need to enact stronger, scientific forest protection laws.

INTRODUCTION

Changes in climate throughout our planet's history have, of course, altered life on Earth in the long run ecosystems have come and gone and species routinely go extinct. But rapid, manmade climate change speeds up the process, without affording ecosystems and species the time to adapt. For example, rising ocean temperatures and diminishing Arctic sea ice affects marine biodiversity and can shift vegetation zones, having global implications. Overall, climate is a major factor in the distribution of species across the globe; climate change forces them to adjust. But many are not able to cope, causing them to die out. Individuals can take various steps to fight climate change, such as reducing their carbon footprints, promoting education and contacting elected officials.

Deforestation and habitat loss



Deforestation is a direct cause of extinction and loss of biodiversity. An estimated 18 million acres of forest are lost each year, due in part to logging and other human practices, destroying the ecosystems on which many species depend. Tropical rainforests in particular, such as the Amazon, hold a high percentage of the world's known species, yet the regions themselves are in decline due to humans. The solutions to deforestation mostly lie in policy — companies and corporations can adopt best practices and refuse to use timber and paper suppliers that

contribute to deforestation. In the same vein, conscious consumers can refuse to patronize companies that do, and put pressure on retailers that employ unsustainable manufacturing methods. Individuals can also participate in land preservation through charities and private corporations. Ultimately, however, international governments need to enact stronger, scientific forest protection laws.

Overexploitation

Overhunting, overfishing and over-harvesting contribute greatly to the loss of biodiversity, killing off numerous species over the past several hundred years. Poaching and other forms of hunting for profit increase the risk of extinction; the extinction of an apex predator or, a predator at the top of a food chain — can result in catastrophic consequences for ecosystems.

Invasive species

The introduction of non-native species into an ecosystem can threaten endemic wildlife (either as predators or competing for resources), affect human health and upset economies. According to the National Wildlife Federation, solutions include creating systems to prevent introduction of invasive species in the first place, effectively monitoring for new infestations and swiftly eradication newly detected invaders. Some scientists use more creative means, such as Google Street View.

Pollution

From the burning of fossil fuels (releasing dangerous chemicals into the atmosphere and, in some cases, depleting ozone levels) to dumping 19 billion pounds of plastic into the ocean every year, pollution completely disrupts the Earth's ecosystems. While it may not necessarily cause extinction, pollutants do have the potential to influence species' habits. For example, acid rain, which is typically caused by the burning of fossil fuels, can acidify smaller bodies of water and soil, negatively affecting the species that live there by changing breeding and feeding habits. The average person can do a number of things to fight atmospheric and hydrologic pollution, such as recycling, conserving energy at home and using public transportation.

Six significant human problems caused by reduced biodiversity

Economic Cost of Lost Biodiversity

Topping the list, of course, is the monetary value of biodiversity around the world. In terms of ecosystem services—functions like pollination, irrigation, soil reclamation and other things that would have to be paid for if nature couldn't take care of it on its own—the value of global biodiversity has been estimated in the trillions. Because of this, deforestation alone has been estimated to cost between \$2-5 trillion annually worldwide.

Reduced Food Security



Reductions in biodiversity, however, do not only occur during deforestation or through poaching. The introduction of new species, too, increases competition amongst locals and often leads to extinction of native populations. In much of the world, this is happening on farms, too, where foreign breeds of cattle are being imported, pushing out natives. This means that the world's livestock population is becoming increasingly narrow; and more vulnerable to disease, drought, and changes in climate.

Increased Contact with Disease

The loss of biodiversity has two significant impacts on human health and the spread of disease. First, it increases the number of disease carrying animals in local populations. Research has shown that the species best adapted to survive critically fragmented habitats are also the most prolific carriers of pathogens. As habitats are broken apart and reduced in size, these animals become more common, winning out over the species that do not typically transmit disease. At the same time, habitat fragmentation brings humans in closer and more frequent contact with these disease carrying species.

More Unpredictable Weather



If forecasting the weather seems simply a matter of deciding to bring an umbrella or not, ask any farmer or coastal homeowner how they feel. Indeed, unseasonable weather, extreme weather, and weather that does not perform to historical norms is a huge problem that can lead to drought, destruction, and displacement. The loss of species even those replaced by invasive has been shown to cause more unpredictable weather.

Loss of Livelihoods

From fishermen to farmers, biodiversity not to mention healthy ecosystems is essential to maintaining livelihoods. When ocean ecosystems collapse, for example, entire communities built on the bounty they provide fold as well. Whether the cause is pollution, overfishing, ocean acidification, or a combination of these and more, humans are tied to the downfall of the ecosystems that surround them.

Losing Sight of "Nature"

Beyond the utility of nature, of course, is the value of Nature to humanity. While an understanding of the science of the natural world does not diminish its grandeur, the physical deflation of it certainly does. When people finally look up from their desks and out their windows, will they be surprised by what remains.

CONCLUSION

Conservation and continued awareness surrounding overexploitation, especially poaching and overfishing, are key. Governments need to actively enforce rules against such practices, and individuals can be more conscious of what they eat and purchase. Other solutions, such as removing subsidies granted to large-scale fisheries, can help, too. Individuals can also participate in land preservation through charities and private corporations. Ultimately, however, international governments need to enact stronger, scientific forest protection laws.

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