

Habitat Loss and Degradation

By Michael Evans ☒ - Tue, 10 May 2011 09:50:00 GMT



Habitat loss is possibly the greatest threat to the natural world.

Every living thing needs somewhere to live, find food and reproduce. This is known as its habitat. In order for a species to be viable its habitat must have sufficient territory, necessary food and water and a range of necessary physical features. These features can include tree cover, rocky hills or deep pools, as well as the organisms and ecosystems that are needed to complete the life cycle.

Habitat loss is when land cover, or its aquatic equivalent, is changed, usually as a result of changing use by humans. Whenever we humans take over natural areas for our own use, we are encroaching on the habitat of another creature and progressively we are doing this at an alarming rate.

The world's forests, swamps, lakes and other habitats continue to disappear as we make way for agriculture, housing, roads, pipelines and all the other hallmarks of industrial development.

Human activity is responsible for the loss of around half of the forests that once covered the Earth. Although these can recover and can even be sustainably harvested, their rate of loss is about ten times higher than the rate of regrowth.

Europe's wetlands are traditionally an important habitat for countless numbers of creatures, but around 60% have been damaged, even though they are often an essential provider of clean drinking water.

Taking just one example: because of rainforest habitat loss it is estimated that at least 120 out of the 620 living primate species (apes, monkeys, lemurs and others) will be extinct within the next 10 to 20 years.

Habitat loss is generally more serious for the larger animals because they need a greater area in which to have a healthy breeding population. Tigers, mountain gorillas, pandas and Indian lions are good examples, but habitat loss does not just affect animals.

A recent study has indicated that more than 40 species of fish currently found in the Mediterranean could disappear in the next few years. Tropical orchids that thrive in the rain forests are at serious risk as are numerous species of birds from a wide variety of habitats. In fact the only species that are not truly affected by habitat loss are creatures that benefit from human activity such as cockroaches and rats.

The International Union for Conservation of Nature and Natural Resources (IUCN) has a Red List of species ly classified as "Threatened" or "Endangered". Habitat loss has been identified as being the main to 85% of these.

Habitat loss is also a huge problem in the marine environment. Destructive fishing, using deep trawlers and dynamiting coral reefs destroy entire ecosystems. Coastal habitats are destroyed when land is drained for development. Excess nutrients from fertilisers or domestic sewage flow into the sea, causing harmful algae to form, blocking out the sunlight and depleting the water of oxygen.

Pollution from toxic substances such as industrial chemicals, pesticides and motor oil are also a real problem. Dredging ship channels will stir up accumulated sediments and pollutants and the removed material is often dumped on salt marshes, destroying the habitats of the creatures that live there.

Accidents at sea have also had a profound effect on habitat destruction. Several large oil tankers have been involved in major spills, and of course there was the Deepwater Horizon oilrig disaster in the Gulf of Mexico. In each case, enormous quantities of oil have been released into the ocean, devastating the entire ecosystems of the area.

Diversity loss is yet another feature of habitat degradation. A particular ecosystem is home to a number of species and as these begin to go into a rapid decline following the loss of their habitat, a more aggressive species might take the opportunity and move in. As the original species struggle to survive in an increasingly hostile environment, the aggressive invader causes further decline until it eventually reigns supreme.

The proliferation of invasive species poses a strong threat to native species as they struggle to cope with highly fluctuating environments. In order to mitigate diversity loss, it is important for conservation efforts to focus on reducing the numbers of invasive species.

The world is getting warmer and climate change has already had, or is expected to have, a serious influence on habitat loss. Many former habitats have already become inhospitable. Plants that thrive in damp, cool conditions now simply wither and die during prolonged dry periods.

A study in *Nature* indicated that within the next 50 years a quarter of the world's land animals and plants could become extinct. This is around a million species.

In the UK, as sea levels rise, marshland close to river estuaries would disappear. The loss of inland wet grassland and coastal sea marsh would lead to the loss of breeding habitats of birds such as the redshank. A continued rise in level would mean the loss of feeding areas needed by waders and other shore birds.

Still in the UK, trees such as the oak and the ash would find it difficult to survive frequent prolonged droughts. Wetland areas that are home to rare moths and other creatures would simply dry out. Warm hot summers also encourage algae to flourish on rivers and lakes, at the expense of fish and bird life.

Milder winters will allow the survival of pests and bacteria that cold weather would formerly have eradicated. This will have a serious effect on crops and wildlife. Thin soils will dry out and erode in summer and flash floods will cause more soil to be washed away.

Rapidly changing weather patterns will also disrupt growing patterns. In parts of the world where rainfall is already scarce, as in parts of Africa and China, crop failure and subsequent famine will become a real danger.

Extreme weather events are increasingly occurring as a result of climate change. These events can be enormously destructive and have a disastrous effect on habitat, since they are often associated with high winds or floods.

We are fortunate to be part of a world that is characterised by the diversity of its many species of plant and animal life. Countless numbers of these species are under threat of extinction, mainly through loss of habitat. The chief reasons for this loss are human intervention and climate change.

The world is already warming and although there is little that can be done about it, we can slow the process down by reducing the amounts of greenhouse gas currently being released into the atmosphere and concentrating more on energy saving measures and renewable energy systems

We are all jointly responsible for the world around us. If mankind can be persuaded to be more environmentally aware of the responsibility to safeguard the habitats of these endangered creatures, there is yet some hope for their survival.



Best Population Size? - The Big Picture

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Population growth is a choice, not an inexorable force of nature. If we wish to, we can keep our population at sustainable levels. If we don't, the forces of biology, technology and economics will keep us growing. Our descendants will not see the stars at night, have the prosperous lifestyles we can aspire to today, know farms and forests, experience wilderness and the incredible other species on the planet.

The Facts:

More than 7 billion people currently inhabit the planet, compared to only 3 billion in 1967. Every year about 135 million people are born and 55 million people die, adding 80 million to our global population. That's about one United States every 4 years, or 1 billion more every 12 years. Almost half of the global population is under the age of 25 and their decisions during their reproductive years will determine whether we have 6 billion or 14 billion people by 2100.

Each person uses far more land than the few feet they actually occupy. We use cropland to grow food, grazing land for meat and dairy, oceans for fishing and oxygen generation, forests for lumber and carbon sequestration, and developed land for habitation, transportation and commerce. This is our Global Footprint. For an average European or American lifestyle, it is 10-20 acres per person.

Population growth is a root cause of many environmental and social problems:

These range from life-threatening to simply disruptive. They include:

- Over 1 billion people do not have enough **food** and **safe drinking water**.
- **Global warming** is disrupting our ecosystems and threatening billions of people with dislocation.
- Energy sources, from wood to oil, are becoming scarcer and harder to reach or extract.
- Due to population pressures, people now live in areas that are basically unsafe. Hundred of thousands of people died in 2010-2011 because they lived on floodplains in Pakistan or by the tsunami-prone coast of Japan. These regions were sparsely populated 30 years ago.
- Population growth shares complex ties to poverty and inequality, exacerbating the gap between the wealthy and the poor, and complicating access to Earth's finite resources.
- In the U.S. alone, sprawl destroys 2.2 million acres of farmland, ranchland and forest every year.
- Americans spend an average of 55 workdays (2200 hours) per year stuck in traffic.

The solutions are things we should be doing anyway:

As Martin Luther King Jr. said: "Unlike plagues of the dark ages or contemporary diseases we do not understand, the modern plague of overpopulation is soluble by means we have discovered and with resources we possess. What is lacking is not sufficient knowledge of the solution but universal consciousness of the gravity of the problem and education of the billions who are its victim."

Here are **5 things** that will reverse population growth nationally and worldwide.

- **Empower women and families to plan how many children they want.** About 200 million women in the world would prefer to delay having children but do not have access to contraceptives and reproductive healthcare. With modern life-saving medicine has come modern contraception. We need to provide services and accurate information to the people who really want it, and elect politicians who promise to do so both in the United States and worldwide.
- **Education and job opportunities, especially for women.** These are critical components for alleviating poverty, gender inequality and overpopulation. Studies have found that when women have more **education and job opportunities**, they choose to have smaller families, and are able to invest more in each child which helps break the cycle of poverty. Ask our politicians and international organizations to help provide education and jobs worldwide.
- **Awareness of environmental and social cost of overpopulation.** Our population is already above a sustainable level, and in many regions well above a safe and prosperous level. As people became aware of this in the 60's and 70's many people chose to have smaller families. Kids are truly wonderful, and caring for them is a challenging and rewarding experience. But parents can keep in mind that every person must be cared for within the constraints of the local and global environment.
- **Social norms.** Refrain from pressuring people to have children if they are not ready or prefer to remain childless. Some cultures value large families. This often suited a sparsely-populated farming or pastoral region, and sometimes remains as a holdover from those times. Measures can be taken to model and emphasize the benefits of smaller families. Let's not glorify teen pregnancy with TV shows and tabloid magazines. Additionally in affluent countries, we need to shift away from a culture of excess and unsustainable consumption.
- **Economic forces.** Most people take their economic situation into consideration when planning their families. If they do not have housing and jobs they delay starting families. Birthrates rose during the housing bubble beginning in 2002, but when the bubble burst and the 2008 recession began, birthrates dropped. Better economic policies in conjunction with slowing population growth worldwide, can help increase global prosperity. Our usual measure of economic progress, Gross Domestic Product (GDP) has a built-in tie to population growth (i.e. more people means more economic transactions). This means GDP can rise with population while median household income (and well-being) actually declines! With the wrong measures we set the wrong goals.

Help spread the word & support the cause!

- Donate to support our efforts to tell people we can slow or stop population growth: donations of any size are welcome.

Health & Environmental Effects of Air Pollution

Health Effects

Air pollution can harm us when it accumulates in the air in high enough concentrations. Millions of Americans live in areas where urban smog, particle pollution, and toxic pollutants pose serious health concerns. People exposed to high enough levels of certain air pollutants may experience:

- Irritation of the eyes, nose, and throat
- Wheezing, coughing, chest tightness, and breathing difficulties
- Worsening of existing lung and heart problems, such as asthma
- Increased risk of heart attack

In addition, long-term exposure to air pollution can cause cancer and damage to the immune, neurological, reproductive, and respiratory systems. In extreme cases, it can even cause death.

Who Is Most at Risk?

Air pollution is a problem for all of us. However, some groups of people are especially sensitive to common air pollutants such as particulates and ground-level ozone. Sensitive populations include children, older adults, people who are active outdoors, and people with heart or lung diseases, such as asthma. If you are sensitive to air pollution, you need to be aware of steps you can take to protect your health.

Environmental Effects

Along with harming human health, air pollution can cause a variety of environmental effects:

Acid rain is precipitation containing harmful amounts of nitric and sulfuric acids. These acids are formed primarily by nitrogen oxides and sulfur oxides released into the atmosphere when fossil fuels are burned. These acids fall to the Earth either as wet precipitation (rain, snow, or fog) or dry precipitation (gas and particulates). Some are carried by the wind, sometimes hundreds of miles. In the environment, acid rain damages trees and causes soils and water bodies to acidify, making the water unsuitable for some fish and other wildlife. It also speeds the decay of buildings, statues, and sculptures that are part of our national heritage. Acid rain has damaged Massachusetts lakes, ponds, rivers, and soils, leading to damaged wildlife and forests. For more information on acid rain, go to <http://www.epa.gov/acidrain/>.

Eutrophication is a condition in a water body where high concentrations of nutrients (such as nitrogen) stimulate blooms of algae, which in turn can cause fish kills and loss of plant and animal diversity. Although eutrophication is a natural process in the aging of lakes and some estuaries, human activities can greatly accelerate eutrophication by increasing the rate at which nutrients enter aquatic ecosystems. Air emissions of nitrogen oxides from power plants, cars, trucks, and other sources contribute to the amount of nitrogen entering aquatic ecosystems.

Haze is caused when sunlight encounters tiny pollution particles in the air. Haze obscures the clarity, color, texture, and form of what we see. Some haze-causing pollutants (mostly fine particles) are directly emitted to the atmosphere by sources such as power plants, industrial facilities, trucks and automobiles, and construction activities. Others are formed when gases emitted to the air (such as sulfur dioxide and nitrogen oxides) form particles as they are carried downwind. For more information on haze, visit the U.S. Environmental Protection Agency (EPA) Visibility Web page: <http://www.epa.gov/oar/visibility/>.

Effects on wildlife. Toxic pollutants in the air, or deposited on soils or surface waters, can impact wildlife in a number of ways. Like humans, animals can experience health problems if they are exposed to sufficient concentrations of air toxics over time. Studies show that air toxics are contributing to birth defects, reproductive failure, and disease in animals. Persistent toxic air pollutants (those that break down slowly in the environment) are of particular concern in aquatic ecosystems. These pollutants accumulate in sediments and may biomagnify in tissues of animals at the top of the food chain to concentrations many times higher than in the water or air.

Ozone depletion. Ozone is a gas that occurs both at ground-level and in the Earth's upper atmosphere, known as the stratosphere. At ground level, ozone is a pollutant that can harm human health. In the stratosphere, however, ozone forms a layer that protects life on earth from the sun's harmful ultraviolet (UV) rays. But this "good" ozone is gradually being destroyed by man-made chemicals referred to as ozone-depleting substances, including chlorofluorocarbons, hydrochlorofluorocarbons, and halons. These substances were formerly used and sometimes still are used in coolants, foaming agents, fire extinguishers, solvents, pesticides, and aerosol propellants. Thinning of the protective ozone layer can cause increased amounts of UV radiation to reach the Earth, which can lead to more cases of skin cancer, cataracts, and impaired immune systems. UV can also damage sensitive crops, such as soybeans, and reduce crop yields.

Crop and forest damage. Air pollution can damage crops and trees in a variety of ways. Ground-level ozone can lead to reductions in agricultural crop and commercial forest yields, reduced growth and survivability of tree seedlings, and increased plant susceptibility to disease, pests and other environmental stresses (such as harsh weather). As described above, crop and forest damage can also result from acid rain and from increased UV radiation caused by ozone depletion.

Global climate change. The Earth's atmosphere contains a delicate balance of naturally occurring gases that trap some of the sun's heat near the Earth's surface. This "greenhouse effect" keeps the Earth's temperature stable. Unfortunately, evidence is mounting that humans have disturbed this natural balance by producing large amounts of some of these greenhouse gases, including carbon dioxide and methane. As a result, the Earth's atmosphere appears to be trapping more of the sun's heat, causing the Earth's average temperature to rise - a phenomenon known as global warming. Many scientists believe that global warming could have significant impacts on human health, agriculture, water resources, forests, wildlife, and coastal areas. For more information, visit EPA's Global Warming Web page: <http://www.epa.gov/globalwarming/>.