

Population & Global Warming



"The overriding challenges facing our global civilization as the new century begins are to stabilize climate and stabilize population. Success on these two fronts would make other challenges, such as reversing the deforestation of Earth, stabilizing water tables, and protecting plant and animal diversity, much more manageable. If we cannot stabilize climate and we cannot stabilize population, there is not an ecosystem on Earth that we can save. Everything will change. If developing countries cannot stabilize their populations soon, many of them face the prospect of wholesale ecosystem collapse."

- State of the World 2000, Worldwatch Institute

Currently, much of the pollution that is causing global warming comes from the United States and other industrialized nations. The U.S. alone is responsible for a quarter of global emissions. But rapid population growth in developing countries is also playing a significant role in increasing the world's overall energy use and rate of deforestation.

Global warming is a threat that can be overcome with leadership and action. The U.S. and other industrial nations have the technology resources to take the global lead toward a more sustainable path by lowering our dependence on fossil fuels. Even as they reduce their own pollution, industrial nations can help developing countries leapfrog to cleaner, more efficient energy technologies as their populations and economies expand. And providing access to international family planning and related health care and education will not only reduce poverty and improve the lives of many, but also reduce the danger of global warming in America and overseas.

As of 2002, annual estimates of global carbon dioxide emissions reached an unprecedented high of 6690 million metric tons of carbon dioxide released into the atmosphere. That same year, the United States



was the leader in carbon dioxide emissions from petroleum consumption, accounting for almost one quarter of the world's total. Carbon dioxide emissions will continue to

grow as miles traveled and time spent sitting in traffic increases. In addition, growing population numbers will mean more cars, and thus more greenhouse gas emissions that accelerate global warming.

What is Global Warming?

Every year, more and more global warming pollution – such as carbon dioxide – is being pumped into the atmosphere from smokestacks and tailpipes around the world as we burn coal and oil. As this blanket of heat trapping gas thickens in the atmosphere, the planet is warming at an accelerating pace. The destruction of forests around the world is contributing further to the problem, that when a healthy forest is cut, it releases CO₂ into the atmosphere.

In fact, the ten hottest years on record have all occurred since 1991, but the impacts of global warming extend far beyond rising temperatures. As the atmosphere warms, there is a ripple effect throughout ecosystems as sea levels rise, water temperatures become warmer, precipitation patterns change and extreme weather emergencies such as droughts become more frequent and more severe.

The Compelling Evidence of Change

Atmospheric concentrations of carbon dioxide, a significant greenhouse gas, have risen nearly 30% since the beginning of the industrial revolution. Over the same period, the average global surface temperature has risen 1 degree Fahrenheit. The 20th century's 10 warmest years all occurred in the last 15 years of

the century and the year 1998 was the warmest on record. If greenhouse gas emissions continue to increase at the current pace, scientists predict that atmospheric concentrations of carbon dioxide will be nearly double current levels by the year 2100, and global temperatures will rise by another 2.7 to 11 degrees Fahrenheit - more than ten times faster than what has been the average rate of natural change since the last ice age.

Global warming is a worldwide problem, but the U.S. must take the lead in its solution.

All of the world's nations will ultimately need to play a role in helping to solve the problem. It is important to recognize, however, that industrialized countries are historically and currently the greatest contributors to the global warming problem. The U.S. is the world's number one producer of greenhouse gases. With less than 5% of the world's population, the U.S. emits 24% of the world's greenhouse gases. The U.S. and other developed countries bear a special responsibility to demonstrate strong leadership in addressing this problem. Only then will other countries be more willing and able to develop on a more sustainable energy path in the years to come.





CASE STUDY:

Climate Change and Polar Bears

The far-reaching effects of climate change are already evident in the Arctic, where the rate of warming over the last 20 years is eight times the rate of warming over the past 100 years. Arctic sea ice is shrinking at an alarming rate, declining by almost a third in the past 130 years.

The loss of ice habitat has severe implications for polar bears, which depend on sea ice for survival. Decreasing ice thickness and warmer temperatures cause winter ice shelves to break up earlier than normal, reducing the polar bear's access to hunting and breeding grounds. In Canada, the southernmost polar bear populations are already experiencing declines in cub survival due to these factors.

Why Care?

Both population growth and global warming have many implications for the long-term health of the planet.

Habitat and Wildlife

- Human-induced global warming is expected to occur rapidly, leaving plants and animals with little or no time to adapt to changing conditions.
- Shifts in weather and vegetative zones due to climate change will have a wrenching effect on species and habitat that have co-evolved over time, for example, Arctic and Antarctic species, migratory birds, fish and coral reef ecosystems.
- The impacts of climate shifts on wildlife are exacerbated by the human infrastructure that exists around protected areas, fragmenting natural spaces and hampering the ability of plants and wildlife to migrate.

Extreme Weather

- Global warming will cause changes in the climate that could result in more extreme weather events, including severe drought, fires, floods and storms patterns. These

events could result in famine, deforestation and drastic habitat alteration, causing species extinction.

- In 2001, over half of the world's 6 billion people lived within 200km of a coastal area. If current warming rates continue, thermal expansion of the oceans and melting of polar ice caps will cause sea levels to rise. Increased flooding from higher tides and stronger storm systems could destroy coastal farmland, habitats and wildlife populations.

Human Health

- Geographic ranges of insect-borne diseases such as malaria can expand northward.
- An increasing number of severe heat waves can have devastating effects. Approximately 20,000 people died in the summer of 2003, from the extreme heat in Europe.
- Warm temperatures are expected to exacerbate urban ozone problems which can cause respiratory problems, particularly among young children and the elderly.

Sustainable Development

- The global population is expected to grow to between 7.8 and 10.9 billion by 2050. This population growth increases needs for energy as well as food, shelter and basic services like education and clean water.
- The increasing burning of fossil fuels and loss of forest to accommodate this growing population may contribute to shifting vegetative zones and thereby threaten agriculture productivity and water availability. These changes will affect economic and social development, as well as environmental sustainability.
- Projections for global population vary depending on access to international family planning and related health care and education. Providing these services will not only reduce poverty and improve the lives of many, it will reduce the danger of climate change and other environmental stressors.

What Can I Do?

Slowing climate change is the responsibility of all of us. There are many ways you can reduce your energy consumption, thereby lowering greenhouse gas emissions.

- Replace regular incandescent light bulbs with compact fluorescent bulbs and look for the Energy Star® label when shopping for household appliances. Energy-efficient products reduce utility bills and decrease household greenhouse gas emissions.
- Walk, bike, car pool, and utilize public transportation whenever possible to reduce auto emissions, the largest source of carbon dioxide emissions in the United States.
- Ask your electric company whether they offer a "green energy" package: for example, one that provides a significant portion of its electricity from a

clean, renewable energy source such as wind, solar, or bio-mass.

- Plant trees - Trees remove atmospheric carbon dioxide through photosynthesis and can help offset greenhouse gas emissions from your home and car.
- Become active in programs, such as NWF's Population & Environment Program and NWF's Climate Change & Wildlife Program, that work on these and related causes.

Most importantly, speak up!

Write your Senator or Representative, urging them to take the following steps:

- Support international family planning funding to address population growth.
- Strictly limit pollution from power plants, especially older, coal-fired power plants that are currently exempt from the most

stringent clean air standards.

- Support the development of efficient, clean energy like wind and solar.
- Eliminate fossil fuel subsidies.
- Raise fuel economy standards for all automobiles, trucks, and sport utility vehicles.
- Enact the McCain-Lieberman Climate Stewardship Act in the Senate, which would require U.S. power plants, oil companies, and factories to reduce greenhouse gas emissions to 2000 levels by the year 2010. A House version of the Act has been sponsored by Rep. Wayne Gilchrest (R-MD) and Rep. John Olver (D-MA).
- Implement a strong international treaty to reduce global greenhouse gas emissions.