



Climate Change Fact Sheet

Climate Change

While climate change is often used interchangeably with “global warming,” usage of the term climate change is becoming more common, because the term encompasses a variety of significant environmental changes, rather than just rising temperatures.

According to the U.S. Environmental Protection Agency, **climate change** refers to “any significant change in measures of climate (such as temperature, precipitation or wind), lasting for an extended period (decades or longer). Climate change may result from:

- Natural factors, such as changes in the sun’s intensity or slow changes in the Earth’s orbit around the sun;
- Natural processes within the climate system (e.g. changes in ocean circulation);
- Human activities that change the atmosphere’s composition (e.g. through burning fossil fuels) and the land surface (e.g. deforestation, reforestation, urbanization, desertification, etc.).”¹

Global Warming

- Global warming is an average increase in the temperature of the atmosphere near the earth’s surface and in the oceans. Like climate change, global warming can be caused by a variety of factors, both natural and man-made.
- Global warming is also sometimes referred to as the greenhouse effect. The greenhouse effect is specifically the rise in the earth’s temperature because concentrations of gases in the atmosphere (e.g., carbon dioxide, nitrous oxide, methane) prevent heat from escaping back into space.

The Importance of Climate Change

Climate change has a significant impact on human activities, including where we can live (rising waters threaten low-lying areas such as New Orleans or much of the Netherlands); the food that can be grown (both drought and flood can wipe out food crops, threatening entire populations); and how and where food can be grown or harvested. In the past few years, science has made it clear that climate change is real and needs to be addressed now.

¹ U.S. Environmental Protection Agency. Climate Change: Basic Information. www.epa.gov/climatechange/basicinfo.html. Accessed February 23, 2010.

Climate Change Facts

It took 125 years to consume the first trillion barrels of oil – the world will consume the next trillion in only 30 years, according to Chevron.

By 2030 the world will consume 47% more oil than it did in 2003.

During the last one hundred years the global temperature has warmed between 0.7-1.5°C.

The current pace of sea-level rise is 50 percent faster than in the last century.

The five warmest years over last century have likely been: 2005, 1998, 2002, 2003, 2004. The top 10 warmest years have all occurred since 1990.

Since the beginning of the Industrial Revolution, carbon dioxide (a green house gas linked to climate change) in the atmosphere has increased by 35 percent.

Despite natural emissions of carbon dioxide (CO₂) emitted by volcanoes, for example, human activities are now adding about 7 billion metric tons of carbon into the atmosphere every year.

Oil production is in decline in 33 of the 48 largest oil-producing countries, yet energy demand is increasing around the globe as economies grow and nations develop.

Oil and gas currently provide more than half of the world's energy supply, and according to the International Energy Agency, they—along with coal (which also releases CO₂)—will continue to be the major sources of energy well into the 21st century unless things are changed.

The International Energy Agency estimates that the world will need to invest \$16 trillion over the next three decades to maintain and expand energy supply.

Agriculture and biodiversity are already being impacted by global warming. Ten percent of all known plant species are under threat of extinction.

Over 20 million Americans, 6.3 million of which are children, suffer from asthma. Public health experts are worried that those numbers will rise with continued greenhouse gas emissions.

The Arctic ice pack has lost an area about twice the size of Texas since the mid-1970s.

Automobiles count for almost a third of the U.S.'s Carbon Dioxide (CO₂) emissions - the largest source after power plants.

By planting a large tree that creates shade, one can reduce heating and cooling costs annually by up to 40 percent.



Further Resources

World Development Report 2010. World Bank.

www.econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTWDRS/EXTWDR2010/0,,contentMDK:21960526~menuPK:5287815~pagePK:64167689~piPK:64167673~theSitePK:5287741,00.html. Accessed February 23, 2010.

UN Climate Change Conference in Copenhagen COP 15/CMP 5. 7 to 18 December 2009. www.unfccc.int/meetings/cop_15/items/5257.php Accessed February 23, 2010.

Copenhagen Accord. UNFCCC. www.unfccc.int/resource/docs/2009/cop15/eng/l07.pdf. Accessed February 23, 2010.

Climate Change Resource Center. USDA Forest Service. www.fs.fed.us/ccrc. Accessed February 23, 2010.