

## Biology Unit 8—Climate Change

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### Global Warming Timeline Fact Sheet

- **1890s:** Swedish scientist Svante Arrhenius and an American, P.C. Chamberlain, independently target carbon dioxide as a warming gas and suggest that the burning of fossil fuels could lead to global warming, describing what is known as the “greenhouse effect.”
- **1927:** Yugoslavian Mulin Milankovic proposes that small, naturally occurring changes in Earth’s orbit affect climate, leading to Ice Ages and warm periods. Geophysical records later support this theory.
- **1956:** Canadian-born physicist Gilbert Plass publishes a series of articles stating human activity can raise the average global temperature “at the rate of 1.1 degree C per century.”
- **1957:** American scientist David Keeling sets up the first continuous collection of carbon dioxide levels in the atmosphere and immediately finds a consistent yearly increase.
- **1977:** The nonpartisan National Academy of Sciences issues a study called Energy and Climate that suggests that the possibility of global warming “should lead neither to panic nor to complacency” and recommends more research be conducted.
- **1983:** The Environmental Protection Agency releases a report detailing the effects of greenhouse gases and some of the threats of human-generated emissions of carbon dioxide on rising temperatures.
- **1988:** NASA climate scientist James Hansen and his team report to Congress on global warming, explaining that the earth is getting measurably warmer and there is a high degree of probability that it is due to human-made greenhouse gases.
- **1990:** The United Nations’ Intergovernmental Panel on Climate Change presents its First Assessment Report, stating that human activities are substantially increasing the concentrations of greenhouse gases in the atmosphere.
- **1992:** The Climate Change Convention, signed by 154 nations in Rio de Janeiro, agrees to prevent “dangerous” warming from greenhouse gases and sets an initial target of reducing emissions from industrialized countries to 1990 levels by the year 2000. Concerned about the cost to American industry, President George H.W. Bush agrees to voluntary targets.
- **1997:** More than 160 nations meet in Kyoto, Japan, to negotiate binding limitations on greenhouse gases, setting legally binding emission cuts for industrialized nations to be met by 2010. The United States Senate says that it will not ratify the agreement unless developing countries like China and India commit to more “meaningful participation.” Though the Clinton Administration signs the treaty at the convention, it decides not to bring the treaty to the Senate for ratification.
- **2000:** Candidate George W. Bush campaigns on supporting mandatory cuts in greenhouse gas emissions.
- **2001:** President George W. Bush appoints New Jersey governor Christine Todd Whitman, with a strong environmental record, to head the EPA. Months later, he announces that the United States will not ratify the Kyoto Protocol because it does not apply to other polluting countries like India and China, and he believes it would damage the U.S. economy.
- **2003:** Scientists record 2003 as the third hottest year on record. Europe experiences its hottest summer in 500 years with an estimated 30,000 fatalities resulting from the hot weather. Researchers conclude the heat wave is attributable to man-made climate change. However, scientists are less certain as to whether a marked acceleration in accumulated greenhouse gases is just a blip or a new trend.
- **2005:** The Kyoto Protocol goes into effect on February 16. The treaty is ratified by more than 140 countries. In a speech on the floor of the U.S. Senate, Sen. James Inhofe (R-Okla.) calls global warming as “the greatest hoax ever perpetrated on the American people.” Meanwhile, researchers link the increased warming with a record U.S. hurricane season, accelerated melting of the Arctic sea ice, and disruption of the global ocean current.
- **2006:** Former Vice President Al Gore’s documentary *An Inconvenient Truth*, about the consequences of climate change, is released. It goes on to become one of the highest grossing documentaries and wins an Academy Award for best documentary feature.
- **2007:** IPCC (Intergovernmental Panel on Climate Change) reports with 90 percent certainty that global warming is man-made and will continue for centuries. A second report predicts that in coming decades rising temperature and sea levels will cause floods and famine.