

Understanding Common Terms Used in Discussions about Climate Change and Agriculture

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*Cover photos courtesy
of Jerry DeWitt (left), USDA-ARS (right)*

Purpose of this Document

As public interest and concern about climate change increase, we are seeing more terms related to climate change in the media, the daily news, websites, technical reports, and on food, fiber and energy products. This glossary offers definitions of some of the more common terms used in reporting and conversations about climate change, greenhouse gases, and agriculture. It is intended for use by educators, secondary and post-secondary students, farmers, policy makers, and food and agricultural professionals.

We have listed the terms, in alphabetical order, with brief definitions, followed by a definition source. In addition, we have provided one or two web references that offer additional information. We end with a list of valuable resources on climate change and greenhouse gases.

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Acidification (Acid Rain)

In life cycle assessments, acidification commonly refers to substances that contribute to acid deposition. Acid deposition, commonly known as acid rain, occurs when emissions from the combustion of fossil fuels and other industrial processes undergo complex chemical reactions in the atmosphere and fall to the earth as wet deposition (rain, snow, cloud, fog) or dry deposition (dry particles, gas). Factors that place an ecosystem or area at risk of acidification include:



Photo courtesy of U.S.
Geological Survey

landscape, past land-use, types of vegetation, and soil depth. Impacts that can occur because of acidification include: nutrient depletion, eutrophication, unlivable conditions for aquatic life, and plant sensitivity to stress and disease.

Source: Ecological Society of America. "Acid Deposition." Located online at: http://www.esa.org/education_diversity/pdfDocs/aciddeposition.pdf

For more information, go to:

- <http://www.pmel.noaa.gov/co2/OA/background.html>
- <http://www.oceana.org/climate/solutions/oceana/acidtest/>

Aggregate Impacts

Aggregate impacts are the total impacts summed up across sectors and/or regions. The aggregation of impacts requires knowledge of (or assumptions about) the relative importance of impacts in different sectors and regions. Measures of aggregate impacts include, for example, the total number of people affected, change in net primary productivity, number of systems undergoing change, or total economic costs.

Source: Intergovernmental Panel on Climate Change (IPCC) Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.ipcc.ch/ipccreports/tar/wg2/678.htm>

Albedo

Albedo is the amount of light that is reflected from an object. A light-colored, bright object has a high albedo as it reflects most of the light that hits it. Conversely, a dark object has a low albedo as it absorbs most of the light. The lower the albedo of the Earth (less snow cover, smaller ice caps, more dark land exposed, etc.) the less infrared radiation is reflected back to space, enhancing global warming.

Source: Georgia State University. "Albedo of the Earth." Located online at: <http://hyperphysics.phy-astr.gsu.edu/HBASE/phyopt/albedo.html>

For more information, go to: <http://www.arcticice.org/albedo.htm>

Anthropogenic

Anthropogenic means resulting from or produced by human beings.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.global-greenhouse-warming.com/anthropogenic-climate-change.html>



Photo courtesy of the National Aeronautics and Space Administration

Baseline

The baseline is the initial collection of data that serves as a basis for comparison for subsequently acquired data. With reference to climate change, scientists often use the average temperatures prior to the Industrial Revolution for their baseline comparisons.

Sources:

- IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>
- Business Dictionary. Located online at: <http://www.businessdictionary.com/definition/baseline-data.html>

For more information, go to: <http://www.sil.org/lingualinks/Literacy/ReferenceMaterials/GlossaryOfLiteracyTerms/WhatIsBaselineData.htm>

Cap and Trade

Cap and trade is a market-based policy tool for protecting human health and the environment. A cap and trade program first sets a maximum limit on emissions. Sources covered by the program then receive authorizations to emit in the form of emission allowances, with the total amount of allowances limited by the cap. Each source can design its own compliance strategy to meet the overall reduction requirement, including sale or purchase of allowances, installation of pollution controls, or implementation of efficiency measures, among other options.

Source: United States Environmental Protection Agency (U.S. EPA). "Cap and Trade." Located online at: <http://www.epa.gov/airmarkets/cap-trade/>

For more information, go to: <http://attra.ncat.org/attra-pub/PDF/carbonsequestration.pdf>



Photo courtesy of <http://leahy.senate.gov/issues/environment/mercury/index.html>

Carbon Cycle

Carbon cycle is the term used to describe the flow of carbon through the atmosphere, ocean, terrestrial biosphere, and lithosphere.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: http://www.visionlearning.com/library/module_viewer.php?mid=95

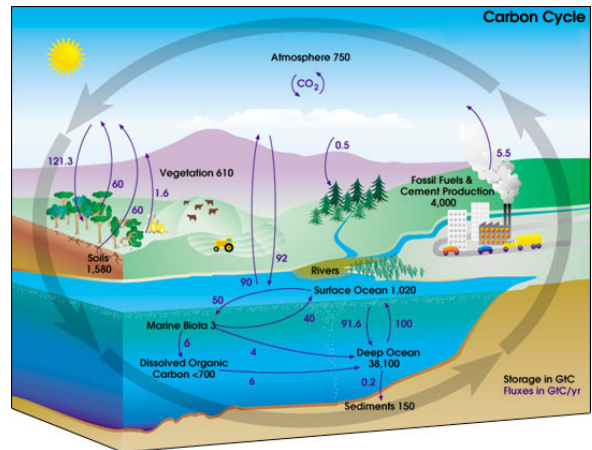


Photo courtesy of NASA Earth Science Enterprise

Carbon Dioxide (CO₂)

CO₂ is a naturally occurring gas that also is a by-product of burning fossil fuels and biomass as well as land-use changes and other industrial processes. It is the principal anthropogenic greenhouse gas that affects the Earth's radiative balance.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.epa.gov/climatechange/emissions/co2.html>

Carbon Footprint

A **carbon footprint** is a measure of the impact our activities have on the environment, in particular climate change. It relates to the amount of greenhouse gases produced through our burning fossil fuels for electricity, heating, transportation, and other daily activities. The carbon footprint is a measurement of all greenhouse gases we individually produce and has units of kilograms (which can be converted to pounds) of carbon dioxide equivalent.

Source: Carbon Footprint – Home of Carbon Management. Located online at: <http://www.carbonfootprint.com/carbonfootprint.html>

For more information, go to: <http://www.carbonfootprint.com/index.html>



Photo courtesy of the City of Seattle (http://seattle.gov/light/Publications/LightReading/08_09)

Carbon Offset

Daily activities consume energy and produce carbon dioxide emissions, for example: flying, driving, heating or cooling residential and commercial spaces. Carbon offsets are used to compensate for the emissions produced by funding an equivalent carbon dioxide saving project somewhere else. Offsetting provides a mechanism to reduce carbon emissions in a cost-effective and economically-efficient manner.

Source: Carbon Footprint – Home of Carbon Management. Located online at: <http://www.carbonfootprint.com/carbonfootprint.html>

For more information, go to: <http://www.carbonfund.org>

Carbon Sequestration

Carbon sequestration is the removal and storage of carbon from the atmosphere in carbon sinks (such as oceans, forests or soils) through physical or biological processes, such as photosynthesis.

Source: Green Facts – Facts on Health and the Environment. Located online at: <http://www.greenfacts.org/en/index.htm>

For more information, go to: http://www.netl.doe.gov/technologies/carbon_seq/overview/ways_to_store.html



Photo courtesy of the Oregon Department of Forestry

Carbon Tax

Carbon tax is a tax on every ton of carbon in fossil fuels or on every ton of greenhouse gas that companies or other sources emit. This tax is meant to act as an incentive for companies to switch to alternative renewable fuels, invest in technology changes to use carbon-based fuels more efficiently, and, in general, adopt practices that would lower their level of greenhouse gas emissions.

Source: ATTRA – National Sustainable Agriculture Information Service. “Agriculture, Climate Change and Carbon Sequestration.” Located online at: <http://attra.ncat.org/attra-pub/PDF/carbonsequestration.pdf>

For more information, go to: http://www.climateark.org/lincoln_plan/

Chicago Climate Exchange

Chicago Climate Exchange (CCX) operates North America’s only cap and trade system for all six greenhouse gases, with global affiliates and projects worldwide. CCX members represent all sectors of the global economy, as well as public sector innovators. CCX emitting members make a voluntary but legally binding commitment to meet annual GHG emission reduction targets. Those who reduce below the targets have surplus allowances to sell or bank; those who emit above the targets must purchase CCX contracts.

Source: Chicago Climate Exchange. Located online at: <http://www.chicagoclimatex.com/content.jsf?id=821>

For more information, go to:

- <http://www.chicagoclimatex.com/>
- <http://www.chicagoclimatex.com/market/data/summary.jsf>
- <http://www.ecx.eu/>

Climate Change

Climate change is the change in temperature, weather patterns, and climate of the Earth. Historically, natural factors such as volcanic eruptions, changes in the Earth's orbit, and the amount of energy released from the Sun have affected the earth's climate. Beginning late in the 18th century, human activities associated with the Industrial Revolution also have changed the composition of the atmosphere and therefore very likely are influencing the Earth's climate.

Source: U.S. Environmental Protection Agency. "Basic Information – Climate Change." Located online at: <http://www.epa.gov/climatechange/basicinfo.html>

For more information, go to: <http://www.epa.gov/climatechange/>

Eco-Label

Eco-labels are seals or logos indicating that an independent organization has verified that a product meets a set of meaningful and consistent standards for environmental protection and/or social justice.

Source: Greener Choices. "What Makes a Good Eco-Label?" Located online at: <http://www.greenerchoices.org/eco-labels/eco-good.cfm>

For more information, go to:

- <http://www.greenerchoices.org/eco-labels/eco-home.cfm>
- <http://www.federalelectronicschallenge.net/resources/docs/ecolabel.pdf>

Ecological Footprint

An ecological footprint is the amount of land and ocean area required to sustain an individual's or a population's consumption patterns and absorb wastes on an annual basis.

Source: Ecological Footprint: Refining Progress. Located online at: <http://www.myfootprint.org/>

For more information, go to:

- <http://www.footprintnetwork.org/en/index.php/GFN>
- <http://www.willamette.edu/about/sustainability/outreach/student/footprint/>



Photo courtesy of the Natural Resources Conservation Service

El Nino/Southern Oscillation

El Nino/ Southern Oscillation is a temporary, abnormal warming of the surface ocean water in the eastern tropical Pacific. It is caused by a reduction in the speed of the east-

ern winds which slows the movement of the surface water on South America's eastern coast from flowing westward. This prevents the deeper, cooler water from rising to the shore and the water temperature warms. El Nino causes a change in weather patterns around the world, including an increase in rainfall in the southern United States.

Source: Scripps Institution of Oceanography. "What is El Nino?" Located online at: <http://meteora.ucsd.edu/~pierce/el-nino/whatis.html>

For more information, go to: <http://www.pmel.noaa.gov/tao/el-nino/el-nino-story.html>

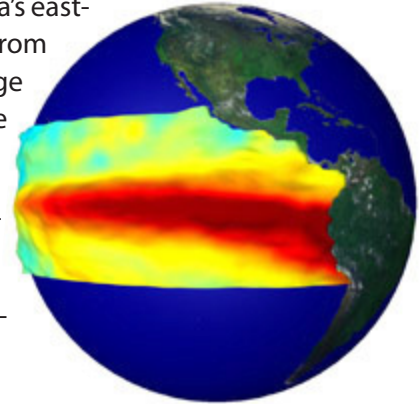


Photo courtesy of the
National Aeronautics and
Space Administration

Emissions Reduction Unit (ERU)

ERU is equal to 1 tonne (metric ton) of carbon dioxide emissions reduced or sequestered arising from a Joint Implementation project calculated using Global Warming Potential.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.environbusiness.com/CChange/ETM.html>

Emissions Trading

Emissions trading is a market-based approach to achieving environmental emission standards that allows businesses that are reducing greenhouse gas emissions to levels below what is required to use or trade the excess reductions to offset emissions at another source.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.iata.org/NR/rdonlyres/95D34D98-7906-4A23-8884-1FA561709037/53257/EmissionsTrading.pdf>

Energy Balance

Energy balance is the energy budget of the Earth's climate system averaged across the globe over long periods of time. The energy balance must be in equilibrium, meaning incoming energy (solar radiation) must equal outgoing energy (reflected solar radiation and infrared radiation).

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.srh.noaa.gov/jetstream//atmos/energy.htm>

Eutrophication

Eutrophication is the process by which a body of water becomes rich in dissolved nutrients with a seasonal deficiency in dissolved oxygen. Eutrophication causes the formation of hypoxic zones and the death of aquatic life.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://coseenow.net/2008/11/eutrophication-animation/>



Photo courtesy of the National Oceanic and Atmospheric Administration

External Cost

External costs are the costs arising from any human activity when the agent responsible for the activity does not take or consider the full account of the impacts on others of his or her actions. These costs are also known as “externalities.”

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.eoearth.org/article/Externality>

General Circulation Model (GCM)

The GCM is a global scale model that represents the large scale behavior of an atmosphere. GCMs account for the physical processes occurring within the atmosphere as well as the transfer of these processes out of and into the atmosphere.

Source: Southwest Research Institute. Located online at: <http://www.swri.org/3pubs/ird2008/Synopses/159807.htm>

For more information, go to: <http://www.giss.nasa.gov/research/modeling/gcms.html>

Global Warming Potential (GWP)

The GWP is an index that represents the combined effect of the varying times greenhouse gases remain in the atmosphere and therefore their relative effectiveness in absorbing outgoing infrared radiation. The index approximates the warming effect of a unit mass of a given greenhouse gas in today’s atmosphere relative to that of carbon dioxide.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.global-greenhouse-warming.com/global-warming-potential.html>

Greenhouse Effect

The greenhouse effect is the rise in temperature that the Earth experiences because certain gases in the atmosphere (water vapor, carbon dioxide, nitrous oxide, and methane, for example) trap energy from the sun. Without these gases, heat would escape back into space and Earth's average temperature would be about 60°F colder. Because of how they warm our world, these gases are referred to as greenhouse gases.

Source: U.S. EPA. "The Greenhouse Effect." Located online at: <http://www.epa.gov/climatechange/kids/greenhouse.html>

For more information, go to: <http://earthguide.ucsd.edu/earthguide/diagrams/greenhouse/>



*Photo courtesy of California
Environmental Protection
Agency*

Greenhouse Gas

Greenhouse gases are those gaseous constituents of the atmosphere that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: http://www.eia.doe.gov/cneaf/electricity/2008forms/consolidate_923.html#E923

Intergovernmental Panel on Climate Change (IPCC)

The IPCC was established to provide the decision-makers and others interested in climate change with an objective source of information about climate change. The IPCC does not conduct any research nor does it monitor climate-related data or parameters. Its role is to assess on a comprehensive, objective, open and transparent basis the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts and options for adaptation and mitigation.

Source: Intergovernmental Panel on Climate Change. <http://www.ipcc.ch/about/index.htm>

For more information, go to: http://www.ucsusa.org/global_warming/science_and_impacts/science/ipcc-backgrounder.html

Kyoto Protocol

The Kyoto Protocol, adopted in 1997 and enforced as of 2005, is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized coun-

tries and the European community for reducing greenhouse gas (GHG) emissions. This amounts to an average of 5 percent against 1990 levels over the period of 2008-2012.

Source: United Nations Framework Convention on Climate Change. Located online at: http://unfccc.int/kyoto_protocol/items/2830.php

For more information, go to: <http://www.eia.doe.gov/oiaf/kyoto/kyotorpt.html>

Land-Use Change

Land-use change is a change in the use or management of land by humans, which may lead to a change in land cover. Land cover and land-use change may have an impact on properties of the climate system and therefore have an impact on climate.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to:

- <http://www.usgcrp.gov/usgcrp/ProgramElements/land.htm>
- http://www.grida.no/publications/other/ipcc_tar/?src=/climate/ipcc_tar/wg2/132.htm



Photo courtesy of the U.S. Global Change Research Program

Life Cycle Assessment (LCA)

LCA is a technique used to assess the environmental aspects and potential impacts associated with a product, process, or service, by:

- compiling an inventory of relevant energy and material inputs and environmental releases;
- evaluating the potential environmental impacts associated with identified inputs and releases; and
- interpreting the results to help you make a more informed decision.

Source: U.S. EPA. "Life Cycle Assessment: System Analysis." Located online at: <http://www.epa.gov/nrmrl/lcaccess/>

For more information, go to:

- <http://www.life-cycle.org/>
- <http://www.gdrc.org/uem/lca/life-cycle.html>

Methane (CH₄)

Methane is a greenhouse gas produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and oil, coal production, and incomplete fossil-

fuel combustion. Methane is approximately 21 times more potent than carbon dioxide at warming the atmosphere.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.epa.gov/methane/>



Photo courtesy of U.S. Geological Survey

Milankovitch Cycles

Milankovitch cycles are variations in the Earth's eccentricity—shape of the Earth's orbit around the Sun, axial tilt—the degree of the tilt of the Earth's axis, and the Earth's precession—the wobble of the Earth on its axis. The cycles affect the seasonality and location of the Sun's solar radiation reaching the Earth's surface and thereby have been the primary influence of the Earth's past glacial and interglacial climate periods.

Source: Montana State University. "Milankovitch Cycles." Located online at: <http://www.homepage.montana.edu/~geol445/hyperglac/time1/milankov.htm>

For more information, go to: <http://www.ncdc.noaa.gov/paleo/milankovitch.html>

Montreal Protocol

The Montreal Protocol is an international agreement designed to protect the stratospheric ozone layer. The treaty was originally signed in 1987 and was amended in 1990 and 1992. It stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform—are to be phased out by 2000. Scientific theory and evidence suggest that, once emitted to the atmosphere, these compounds significantly deplete the stratospheric ozone layer that shields the planet from damaging UV-B radiation.

Source: Center for International Earth Science Information Network. "Montreal Protocol." Located online at: <http://www.ciesin.org/TG/PI/POLICY/montpro.html>

For more information, go to: http://ozone.unep.org/Publications/MP_Handbook/index.shtml

Photo courtesy of the U.S. Global Change Research Program

Nitrous Oxide (N₂O)

Nitrous oxide is a powerful greenhouse gas emitted through soil cultivation practices, especially the use of commercial and organic fertilizers, fossil-fuel consumption, nitric acid production, and biomass burning. Nitrous oxide is approximately 310 times more powerful than carbon dioxide in warming the atmosphere.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.epa.gov/nitrousoxide/sources.html>



Ocean Acidification

Ocean acidification relates to the ongoing decrease in ocean pH as a result of the uptake of anthropogenic carbon dioxide (CO₂) in the ocean. Surface ocean pH is estimated to have decreased from approximately 8.25 to 8.14 between 1751 and 2004 and may reach 7.85 in 2100.

Source: Encyclopedia of the Earth. "Ocean Acidification." Located online at: http://www.eoearth.org/article/Ocean_acidification

For more information, go to: <http://www.ocean-acidification.net/>

Ozone (O₃)

Ozone (O₃) is a gas composed of three oxygen atoms. It is not usually emitted directly into the air, but at ground-level it is created by a chemical reaction between the oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. Ozone has the same chemical structure whether it occurs miles above the earth or at ground-level and can be "good" or "bad," depending on its location in the atmosphere.

Source: U.S. EPA. "Ground-Level Ozone." Located online at: <http://www.epa.gov/air/ozonepollution/>

For more information, go to: <http://www.epa.gov/ozone/>

Positive Feedback

Positive feedback refers to any change in the environment leading to additional and enhanced changes in that system. Examples include oceanic warming and glacier and sea ice melting.

Source: University of Michigan. "Climate Feedback and Human Response." Located online at: http://www.globalchange.umich.edu/globalchange1/current/lectures/samson/feedback_mechanisms/index.html

For more information, go to: <http://www.global-greenhouse-warming.com/climate-feedback.html>

Radiative Forcing

A measure of how the energy balance of the Earth-atmosphere system is influenced when factors that affect climate are altered. The word "radiative" signifies that the factors affect the balance between incoming solar radiation and outgoing infrared radiation.



Photo courtesy of the U.S. Environmental Protection Agency

tion within the Earth's atmosphere. Positive forcing tends to warm the surface while negative forcing tends to cool it.

Source: The Encyclopedia of Earth. "Radiative Forcing." Located online at: http://www.eoearth.org/article/Radiative_forcing

For more information, go to: <http://solarphysics.livingreviews.org/open?pubNo=lrsp-2007-2&page=articlesu5.html>

Smog

Photochemical smog (commonly referred to as smog) is a term used to describe air pollution that is a result of the interaction of sunlight with certain chemicals in the atmosphere. One of the primary components of photochemical smog is ozone. While ozone in the stratosphere protects earth from harmful UV radiation, ozone on the ground is hazardous to human health. Ground-level ozone is formed when vehicle emissions containing nitrogen oxides (primarily from vehicle exhaust) and volatile organic compounds (from paints, solvents, and fuel evaporation) interact in the presence of sunlight.



Photo courtesy of Maricopa County, Arizona

Source: "What is Smog?" Located online at: <http://weather.about.com/od/ozoneinformation/qt/smogcity.htm>

For more information, go to: <http://www.smogcity.com>

Spatial and Temporal Scales

Spatial scales may range from local (less than 100,000 km²), through regional (100,000 to 10 million km²), to continental (10 to 100 million km²). Temporal scales may range from seasonal to geological (up to hundreds of millions of years).

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: http://profhorn.aos.wisc.edu/wxwise/AckermanKnox/chap14/climate_spatial_scales.html

Sulfur Hexafluoride (SF₆)

Sulfur hexafluoride is the most potent greenhouse gas, although available in only very minute quantities, and is approximately 22,000 times more powerful than carbon dioxide. It is used in heavy industry to insulate high-voltage equipment and to assist in the manufacturing of cable-cooling systems.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: http://www.sciencedaily.com/articles/s/sulfur_hexafluoride.htm

Sustainable Development

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Source: IPCC Third Assessment Report Glossary. Located online at: <http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

For more information, go to: <http://www.lbl.gov/Education/ELSI/sustain-main.html>



Photo courtesy of the EcoPartnership

United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC is an international treaty that was developed to analyze what can be done to reduce global warming and to cope with whatever temperature increases are inevitable. More recently, a number of nations approved an addition to the treaty, the Kyoto Protocol.

Source: United Nations Framework Convention on Climate Change. Located online at: http://unfccc.int/essential_background/items/2877.php

For more information, go to: <http://www.climatechange.gov.au/international/unfccc.html>

Water Footprint

The water footprint of an individual, community or business is defined as the total volume of freshwater that is used to produce the goods and services consumed by the individual or community or produced by the business.

Source: WaterFootprintNetwork. Located online at: <http://www.waterfootprint.org/?page=files/home>

For more information, go to: <http://www.waterfootprint.org/?page=files/Publications>

Other Resources

Colorado State University. "Colorado Climate Change." Available online at: <http://ccc.atmos.colostate.edu/>

Institute for Agriculture and Trade Policy. "Identifying our Climate 'Footprint' – Assessing and Reducing the Global Warming Impacts of Food and Agriculture in the U.S." April 2009. Available online at: <http://www.iatp.org/iatp/publications.cfm?accountID=258&refID=105667>

International Institute on Sustainable Development. Available online at: <http://www.iisd.org/climate>

May, Elizabeth, and Zoe Caron. *Global Warming for Dummies*. Ontario, Canada: John Wiley & Sons Canada, Ltd., 2009.

National Oceanic and Atmospheric Administration. "Climate." Located online at: <http://www.noaa.gov/climate.html>

Nature Publishing Group. "Nature Reports Climate Change." Available online at: <http://www.nature.com/climate/index.html>

"Official An Inconvenient Truth: Global Warming Effect, Al Gore Movie, Climate Change, CO2 Emissions." Available online at: <http://www.climatecrisis.net/>

The Pew Center on Global Climate Change. Available online at: <http://www.pewclimate.org>

The Weather Channel. "Environment, Climate Change, and Green Living News: Forecast Earth." Available online at: <http://climate.weather.com/news/science-news.html?from=secondarynav>

United Nations Environment Programme. "Climate Change." Available online at: <http://www.unep.org/themes/climatechange/>

University of California – Berkley. "Cal Climate Change Center." Available online at: <http://calclimate.berkeley.edu/>

University of Chicago. "Sustainability." Available online at: <http://sustainability.uchicago.edu/index.html>

U.S. Climate Change Science Program. Available online at: <http://www.climatescience.gov/>

U.S. Climate Change Science Program. "Climate Literacy: 'The Essential Principles of Climate Sciences.'" March 2009. Available online at: <http://www.climatescience.gov/Library/Literacy/default.php>

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