

CLIMATE CHANGE

Annotated Bibliography of K-12 Educational Resources

Wisconsin Center for Environmental Education (06/08)

The following list consists of selected resources on the general topic of climate change. This inherently includes related topics such as air pollution, global warming and the greenhouse effect. Many resources specifically about air or pollution individually may not be directly included here, but are available. All materials listed below are available for loan at the WCEE Resources Library. Please call or visit the WCEE for assistance or visit our web site at www.uwsp.edu/wcee/library for additional information on borrowing resources.

Special note: Many people believe that today there is less of a controversy about whether or not global warming is actually occurring, and maintain that human-induced climate change is generally well-accepted. This may be important to consider when designing a climate change curriculum for your classroom, as many of the older resources focus in some measure on this “controversy”. The controversy today may in fact be more about when and what types of actions should be taken in regard to climate change.

Teaching Activity Guides

Air by Ava Drutman, Good Apple, Carthage, IL. (1992).

Less an activity guide and more a series of worksheets. Works best, therefore, as a supplement to existing curricula. Reproducible handouts often include vocabulary and background information. Grade levels: K-9 Length: 46 pages WCEE call number: AC AR 5

Teaching About Climate Change by Tim Grant and Gail Littlejohn. New Society Publishers, Gabriola Island, BC. (2001).

Developed with Green Teacher magazine, this publication serves as a combination activity guide and source for background information. An anthology of articles or activities written by classroom teachers. Very complete.

Grade levels: K-12, Adult Length: 58 pages WCEE call number: AC CC 8

Forecasting the Future by The Stephen Birch Aquarium-Museum Education Department, National Science Teachers Association, Arlington, VA. (1996).

Five chapters of background information about climate are linked to 14 different activities in animal biology, chemistry, geology, meteorology, physics, and plant biology. Also includes extension activities, glossary, and annotated bibliography.

Grade levels: 5-12 Length: 149 pages WCEE call number: AC CC 7

Global Warming & the Greenhouse Effect by Lawrence Hall of Science, University of California at Berkeley, Berkeley, CA. (1990).

A very teacher-friendly activity guide specifically about climate change. Many experiments and demonstrations are utilized. Very useable format.

Grade levels: 5-12 Length: 170 pages WCEE call number: AC CC 5

Going Places, Making Choices by The National 4-H Council. National 4-H Council, Chevy Chase, MD. (1999).

A series of 5 booklets (essentially mini-activity guides) focusing on transportation and mobility issues. The third booklet deals specifically with climate change, but the other booklets are also quite relevant. Usable formats.

Grade levels: 9-12 Length: 17-22 pages each WCEE call number: AC LS 8

Ozone by Norman Anderson, Kendall/Hunt Publishing Company, Dubuque, IA. (1996).

An activity guide specifically dealing with ozone and how it related to weather conditions, air quality, etc. Activities are presented in a useable format that is supplemented with a glossary and list of additional resources.

Grade levels: 9-12 Length: 146 pages WCEE call number: AC AR 17

Project A.I.R.E by US Environmental Protection Agency. (1994)

Downloadable activities are available at <http://www.epa.gov/ne/students/teacher/aire.html>, and a hardcopy is available with the call number AC AR 8.

Videos

Mystery of the Statue, The by Screenscope, Inc. (1999).

The search for the causes of a statue's degradation leads to discussions about acid rain and air pollution. Though climate change is only briefly discussed, the use of a storyline helps introduce many of the factors that contribute to it.

Grade levels: K-6 Length: 20 minutes WCEE call number: AV AR 10.3

An Inconvenient Truth: A Global Warning by Paramount, Hollywood, CA. (2006).

Former Vice President Al Gore explains the facts of global warming, presents arguments that the dangers of global warming have reached the level of crisis, and addresses the efforts of certain interests to discredit the anti-global warming cause. Between lecture segments, Gore discusses his personal commitment to the environment, sharing anecdotes from his experience.

Grade levels: 5-9, 9-12, adult Length: 96 minutes WCEE call number: AV DVD CC 13

Climate Change and Our Future by Classroom Encounters, Natick, MA. (2006).

Dr. William Moomaw, atmospheric chemist at Tufts University, discusses climate change with 9th grade students at Wellesley High School in Wellesley, MA.

Grade levels: 9-12 Length: 80 minutes WCEE call number: AV DVD CC 11

Eyes of Nye, The: Global Climate Change by Disney Educational Productions, Elk Grove Village, IL. (2005).

Find out how scientists measure climate change, how CO₂ affects the Earth, and discover what role fossil fuels play in climate change. Nye takes an in-depth look at the possible causes of global warming. DVD extras include printable educator's guide, web links, and activities.

Grade levels: 9-12 Length: 23 minutes WCEE call number: AV DVD CC 5

Too Hot Not to Handle by HBO Home Video. (2006).

This video provides a good introduction to the issue of climate change, including a useful demonstration of the greenhouse effect. It also shows how climate change affects the United States.

Grade levels: 9-12, adult Length: 54 minutes WCEE call number: AV DVD CC 15

What's Up With the Weather? by WGBH Boston Video, South Burlington, VT. (2000).

A special joint release from the Nova and Frontline television series. Very comprehensive (though consequently quite long). Focuses on the two sides of the debate over whether or not global warming is happening, to what extent, and what actions should be taken.

Grade levels: 9-12, Adult Length: 120 minutes WCEE call number: AV CC 5

60 Minutes: Global Warming by CBS Broadcasting, Inc. (2006).

This short 60 Minutes segment summarizes the evidence in the Arctic supporting that global warming is real. This evidence includes melting ice caps, the intensity of storms, and the extinction of polar bears.

Grade levels: Adult Length: 10 minutes WCEE call number: AV DVD CC 16

Books for Youth

Red Coral House, The by Jeff Hartman. Hartman, Oracle, AZ. (2002).

Fiction. A snail and a coral polyp search out the Red Coral House only to find it spotted white and dying. A "wise old grouper" helps explain how warmer oceans are causing many problems, including the one with the Red Coral House. A good way to help introduce the concept of climate change to younger students.

Grade levels: K-4 Length: 31 pages WCEE call number: BY EG 68

Down-to-Earth Guide to Global Warming, The by Laurie David and Cambria Gordon, Orchard Books, New York, NY. (2007).

A vibrant and easy to read non-fiction book for students that uses real-life examples to help explain global warming.

Grade levels: 4-9 Length: 112 pages WCEE call number: BY CC 8

Global Warming by Sally Morgan, Reed, Chicago, IL. (2003).

Non-fiction. Similar in scope and presentation to the above two resources, quite comprehensive. Includes many pictures and charts as well as timeline, glossary, and list for further reading.

Grade levels: 5-9 Length: 64 pages WCEE call number: BY CC 2

Greenhouse Effect, The by Rebecca Johnson, Lerner Publications Company, Minneapolis, MN. (1990).

Non-fiction. A look at the science behind global warming, including chapters on CO2 and other greenhouse gases. Also looks at possible worldwide effects of global warming, and possible actions to help reduce warming.

Grade levels: 5-12 Length: 112 pages WCEE call number: BY CC 1

North Pole Was Here, The by Andrew C. Revkin, Houghton Mifflin, Boston, MA. (2006).

This non-fiction narrative by New York Times reporter Andrew Revkin chronicles his time spent in the North Pole with oceanographers and climatologists. Interspersed by his personal account are historical facts and stories and other related Times articles.

Grade levels: 5-Adult Length: 128 pages WCEE call number: BY CC 7

Reference/Background Books

Complete Idiot's Guide to Global Warming, The by Michael Tennesen, Alpha Books, New York, NY. (2004).

This book is a good introductory text for those who want to know more about the complex topic of climate change and global warming. This book is easy to read and educational for those starting out in their examination of the field, though further reading on this topic will show that some of the core premises of the book are more contentious than the author seems to think.

Grade levels: 9-12, adult Length: 315 pages WCEE call number: BA CC 28

Field Notes from a Catastrophe: Man, Nature, and Climate Change by Elizabeth Kolbert, Bloomsbury, New York, NY. (2006).

Long known for her insightful and thought provoking political journalism, author Elizabeth Kolbert now tackles the controversial and increasingly urgent subject of global warming. This is the author field notes and she asks what, if anything, can be done to save our planet. Easy read and very insightful piece of literature.

Grade levels: 9-12, adult Length: 210 pages WCEE call number: BA CC 25

Global Warming: Opposing Viewpoints Greenhaven Press, San Diego, CA. (1997).

A book in a series entitled "Opposing Viewpoints". A good resource for working with the upper-level EE goals, such as values clarification and citizen action skill building.

Grade levels: 9-12, Adult Length: 192 pages WCEE call number: BA CC 2

Global Warming: Personal Solutions for a Healthy Planet by Christopher Spence, Palgrave Macmillan, New York, NY. (2005).

Christopher Spence goes step-by-step, explaining the problems and threats, the scientific views, and the role of both government and business in generating the predicament and creating possible solutions.

Grade levels: 9-12, adult Length: 191 pages WCEE call number: BA CC 22

Low Carbon Diet: A 30 Day Program to Lose 5000 Pounds by David Gershon, Empowerment Institute, Woodstock, NY. (2006).

This interesting book lays out how to reduce one's annual carbon dioxide emissions. It includes 22 areas that can be altered to reduce emissions and clearly describes what actions should be taken.

The book also includes checklists and schedules to monitor one's progress or to help motivate a team of people/households interested in the Low Carbon Diet.

Grade levels: 9-12, adult Length: pages WCEE call number: BA LS 63

Climate of Hope: New Strategies for Stabilizing the World's Atmosphere by Christopher Flavin and Odil Tunali, Worldwatch Institute, Washington, DC. (1996).

Published by the well-respected Worldwatch Institute, a helpful primer about the current state of understanding of climate change and proposals for improvement. Includes many helpful charts and figures.

Grade levels: Adult Length: 84 pages WCEE call number: SER WW 130

Facts and Trends to 2050: Energy and Climate Change by World Business Council for Sustainable Development, Earthprint Limited. (2004).

This publication provides an overview of key facts and societal challenges to economic development, future energy demand and the impact that demand could have on the climate system.

Grade levels: Adult Length: 13 pages WCEE call number: BA CC 19

Our Changing Planet by Subcommittee on Global Change, Office of Science and Technology. (1995).

This report focuses on the scientific study of the Earth's system and its components. Advocates for global change research.

Grade levels: Adult Length: 150 pages WCEE call number: BA CC 9

Over Our Heads: A Local Look at Global Climate by John Ryan, Northwest Environment Watch, Seattle, WA. (1997).

A readable primer from Northwest Environment Watch. After introducing causes and concerns, deals with actions for change. Short and informative.

Grade levels: Adult Length: 78 pages WCEE call number: BA CC 3

Up in Smoke? Threats from, and responses to, the impact of global warming on human development by Andrew Simms, New Economics Foundation, London. (2004).

This report represents an unprecedented coming together of leading environmental and development organizations with decades of experience working with poor communities across the world. It discusses the impacts of climate change on human existence across the globe.

Grade levels: Adult Length: 36 pages WCEE call number: BA CC 16

Vital Climate Change Graphics by UNEP/GRID-Arendal, Arendal, Norway. (2005).

This publication seeks to translate the complex subject of climate change into material that can be useful to a broad range of readers. Divided into 3 sections, it covers fundamentals, impacts, and conclusions.

Grade levels: Adult Length: 23 pages WCEE call number: BA CC 17

Websites

Global Warming 101 by the Will Steger Foundation, Minnesota (2008).

Following along on Will Steger's expeditions to the Arctic. Students can learn firsthand accounts of the conditions in the arctic by asking questions or viewing segments available online. Free curriculum is developed for middle school but can be adapted for younger or older grades.

Grade Levels: 4-12

Web link: www.globalwarming101.com

Leonardo DiCaprio's short online films 'Global Warning' and 'Water Planet' by Leonardo DiCaprio Web Site, Greenhour Corporation, Inc. (2008).

This "eco-site" provides information and action steps you can take to get informed about climate change and global water issues.

Grade Level: 6-12, adult

Web link: www.leonardodicaprio.org

Stop Global Warming by Stop Global Warming (2005-2008).

This web site is filled with tips to reduce greenhouse gases, video clips from famous actors, musicians, politicians, etc. and information from scientists.

Grade level: 6-adult

Web link: <http://www.stopglobalwarming.org>

Curriculum Guide for the Climate Impact Map by the Union of Concerned Scientists (2000).

Global Warming: Early Warning Signs: Curriculum Guide for High School Courses in Biology, Environmental Science, Geography, Earth Science and others focusing on the society-environment interface.

Grade Level: 9-12

Web link: www.climatehotmap.org/curriculum/index.html

Bath Tub Scenerio of Climate Change by Schlumberger Limited (2008).

Great information from top scientists of climate change. They have an interactive “bath tub” simulation that helps people better understand the scenario of climate change.

Grade Level: 9-adult

Web link: http://www.seed.slb.com/en/scictr/watch/climate_change/challenge.htm

Carbon Off Sets by Trexler Climate and Energy Services (2006).

A consumer guide to help reduce carbon emissions through their purchasing power.

Grade Levels: 9-Adult Length: 41 pages

Web link: <http://www.cleanair-coolplanet.org/ConsumersGuidetoCarbonOffsets.pdf>

Teacher on Climate Change by Rex Media Limited (2007?).

Need help supporting your argument on climate change? This teacher does a wonderful job in weighing the risks of taking action or not in regard to climate change. It is well done.

Grade Level: 9-adult

Web link: <http://wonderingmind42.com/>

Climate Change 2007-Synthesis Report by Intergovernmental Panel on Climate Change (2007).

One of the most talked about reports in 2007 regarding Climate Change. This is what won the Nobel Peace Prize for former vice president Al Gore and the Intergovernmental Panel on Climate Change. View the full report or summary.

Grade Level: 11-adult Length: 52 pages (22 pages for the summary)

Web link: <http://www.ipcc.ch/ipccreports/ar4-syr.htm>

Union of Concerned Scientists Publications by Union of Concerned Scientists (publication dates vary).

This website contains a number of documents and publications for free downloads. Topics vary but a few publications that are recommended are the following: Common Sense on Climate Change: Practical Solutions to Global Warming (2002), Confronting Climate Change in the Great Lakes Region: Impacts on Wisconsin Communities and Ecosystems (2003), and Global Warming Solutions: Reducing Heat-Trapping Emissions in the Great Lakes Region (2003)

Grade Level: 11-adult

Web link: www.ucsusa.org/publications/#environment