

# ADDITIONAL RESOURCES

## Climate Change

### 100 Views of Climate Change

Colorado State University

<http://changingclimates.colostate.edu>

These materials include current and relevant information about climate change in the form of videos, notes about articles and books, and links to websites.

### American Climate Attitudes

The Social Capital Project

<http://www.thesocialcapitalproject.org/>

[The-Social-Capital-Project/pubs/aca](http://www.thesocialcapitalproject.org/pubs/aca)

This report provides review of public opinion research and polling data over the last few years, compares trends since 1997, and offers communication and engagement recommendations.

### Climate.gov

National Oceanic and Atmospheric Administration (NOAA)

[www.climate.gov](http://www.climate.gov)

This website provides information, maps, educational resources, and videos about climate science and climate change.

### Climate Adaptation Knowledge Exchange (CAKE)

Island Press and EcoAdapt

[www.CAKEx.org](http://www.CAKEx.org)

This joint project is aimed at building a shared knowledge base for managing natural systems with regard to climate change. This website has case studies profiles of on-the-ground adaptation projects, a directory of people and organizations engaged in adaptation, and tools and information related to climate change and adaptation.

### Climate Connections Special Series

National Public Radio

<http://www.npr.org/series/9657621/climate-connections>

This NPR special species features videos, articles, and interactive maps that look at the causes and signs of climate change. Also provided are stories about solutions and adaptation.

### Climate Change: Evidence and Causes

National Academy of Sciences and the Royal Society, 2014

[http://www.nap.edu/catalog.php?record\\_id=18730](http://www.nap.edu/catalog.php?record_id=18730)

This short downloadable booklet provides clear answers to 20 common questions and background basics to climate change science.

### Climate Change: Evidence, Impacts, and Choices: Answers to Common Questions about the Science of Climate Change

National Research Council, 2012

[http://nas-sites.org/americasclimatechoices/files/2012/06/19014\\_cvtx\\_R1.pdf](http://nas-sites.org/americasclimatechoices/files/2012/06/19014_cvtx_R1.pdf)

This booklet summarizes the current state of knowledge about climate change, explains some impacts expected in this century and beyond, and examines how science can help inform choices about managing and reducing the risks posed by climate change.

### Climate Change Handbook: A Citizen's Guide to Thoughtful Action

Mark Apel, Lauren McDonell, Jay Moynihan, Darien Simon, and Viviane Simon-Brown, 2010

<http://ir.library.oregonstate.edu/xmlui/handle/1957/20080>

After providing an overview of climate change basics, this handbook focuses on how individuals can engage with local government and how to take action.

### Climate Change Information

U.S. Environmental Protection Agency (EPA)

<http://www.epa.gov/climatechange/>

This is EPA's main climate change information page and is loaded with easy to understand information on the science behind global climate change, an award-winning kid's site, and carbon and water footprint calculators.

### Climate Change Science and Modeling: What You Need to Know

U.S. Forest Service

[www.fs.fed.us/ccrc/climate-basics/education.shtml](http://www.fs.fed.us/ccrc/climate-basics/education.shtml)

This interactive online education module gives a brief overview of the climate system, greenhouse gases, climate models, current climate impacts, and future climate projections. Interactive features allow users to control their learning experience, with opportunities to explore outside links, and learn definitions and relevant facts. The main material is followed by an activity specific to the user's geographical region and completing the activity will generate a personalized certificate.

### Climate Literacy Guidelines: The Essential Principles of Climate Science

U.S. Global Change Research Program, 2009

[www.globalchange.gov/resources/educators/climate-literacy](http://www.globalchange.gov/resources/educators/climate-literacy)

This guide presents information for individuals and communities that want to learn about climate, impacts of climate change, and approaches to mitigation and adaptation.

### **Climate Modeling 101**

The National Academy of Sciences  
<http://nas-sites.org/climate modeling/>  
This website provides information and short videos on climate models and how they are constructed and validated.

### **The Climate Reality Project, Videos**

The Climate Reality Project  
<http://climateralityproject.org/video/>  
This website has several videos about climate change, carbon emissions, and solutions. Be sure to check out “Climate 101 with Bill Nye” to get a brief explanation of climate change and its potential effects on our planet.

### **Climate Voices**

University Corporation for Atmospheric Research  
<http://climatevoices.org>  
The Climate Voices network is a database of experts from around the country who bring nonpolitical conversations about the research findings of climate scientists to citizens across the United States and Puerto Rico. Use the map to find a speaker near you and invite them to speak to your class.

### **Earth Observatory**

NASA  
<http://earthobservatory.nasa.gov/>  
This website features images, global maps, news, and data about climate and the environment that emerge from NASA research, including satellite missions, in-the-field research, and climate models.

### **Global Climate Change**

NASA  
<http://climate.nasa.gov>  
This website provides information on the evidence, causes, effects, and uncertainties

of climate change. There is also recent data on Earth’s “vital signs” including global temperature, carbon dioxide levels, and the rate of sea level rise.

### **Intergovernmental Panel on Climate Change (IPCC)**

<http://www.ipcc.ch/>  
IPCC is the primary source for many climate change publications. At their website, you’ll find the 5th Assessment Report on Climate Change, along with other reports, graphics, and news.

### **Preparing for Climate Change: A Guidebook for Local, Regional and State Government**

Climate Impacts Group at the University of Washington, 2007  
<http://www.cses.washington.edu/db/pdf/snoveretalgb574.pdf>

This guide provides a step-by-step guide to help decision makers identify and plan for climate change in their community.

### **Skeptical Science: Getting Skeptical about Global Warming Skepticism**

John Cook, Global Change Institute at the University of Queensland  
[www.skepticalscience.com](http://www.skepticalscience.com)

This website reviews scientific, peer-reviewed literature to help explain climate change and to address common misconceptions about climate change.

### **Southeast Region Technical Report to the National Climate Assessment**

Keith Ingram, Kirstin Dow, and Lynne Carter; 2012  
[http://downloads.usgcrp.gov/NCA/Activities/NCA\\_SE\\_Technical\\_Report\\_FINAL\\_7-23-12.pdf](http://downloads.usgcrp.gov/NCA/Activities/NCA_SE_Technical_Report_FINAL_7-23-12.pdf)

This report summarizes the scientific literature that addresses climate impacts

on the southeastern United States with a focus on literature published since 2004. Includes a chapter that specifically examines climate change and forests.

### **Teaching Controversy**

Mark McCaffrey, 2012  
<http://www.nestanet.org/cms/sites/default/files/journal/Fall12.pdf>

The author discusses why teachers should not present climate change as a “theory” open for debate but instead should focus on helping students understand climate change and the supporting scientific research. The article is part of a special issue on climate change education in *The Earth Scientist* published by the National Earth Science Teachers Association.

### **The Third National Climate Assessment**

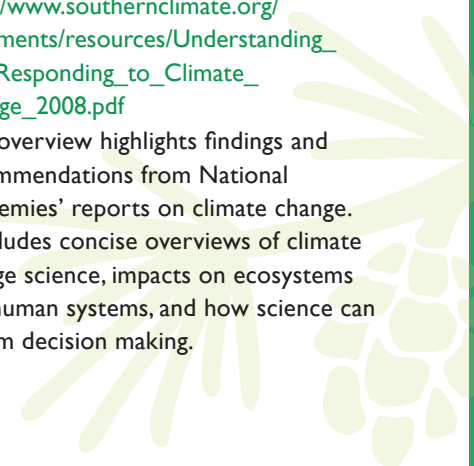
U.S. Global Change Research Program, 2014  
<http://nca2014.globalchange.gov/>

This comprehensive report summarizes climate change and its impact in the United States.

### **Understanding and Responding to Climate Change: Highlights of the National Academy Reports**

The National Academies, 2008  
[http://www.southernclimate.org/documents/resources/Understanding\\_and\\_Responding\\_to\\_Climate\\_Change\\_2008.pdf](http://www.southernclimate.org/documents/resources/Understanding_and_Responding_to_Climate_Change_2008.pdf)

This overview highlights findings and recommendations from National Academies’ reports on climate change. It includes concise overviews of climate change science, impacts on ecosystems and human systems, and how science can inform decision making.





### **U.S. Global Change Research Program**

<http://www.globalchange.gov/>

The U.S. Global Change Research Program, sponsored by thirteen federal agencies, integrates federal research on climate and global change. The website provides access to reports, news, and other climate-related information and can be searched by region or by sector.

### **Yale Project on Climate Change Communication**

Yale University

<http://environment.yale.edu/climate>

This website provides reports, videos, and other resources that help explain research related to public knowledge and perceptions of climate change.

### **Young Voices for the Planet, The Movies**

Young Voices on Climate Change

[www.youngvoicesonclimatechange.com/climate-change-videos.php](http://www.youngvoicesonclimatechange.com/climate-change-videos.php)

This series of short films presents replicable success stories of young people tackling climate change issues in their communities. Accompanying curriculum for each video is also available.

### **Climate Change and Forests**

#### **Adapting to Climate Change: A Short Course for Land Managers**

U.S. Forest Service, Climate Change Resource Center

[http://www.fs.fed.us/ccrc/hjar/index\\_st.html](http://www.fs.fed.us/ccrc/hjar/index_st.html)

A series of videos and graphics illustrating the key concepts of climate change, possible impacts on U.S. forests and grasslands, and different strategies we can employ to adapt to climate change.

### **A Climate Change Atlas for 134 Forest Tree Species of the Eastern United States**

Anantha Prasad, Louis Iverson, Stephen Matthews, and Matthew Peters; U.S. Forest Service

<http://www.nrs.fs.fed.us/atlas/tree>

This searchable database provides information on 134 common trees in the eastern U.S. The key feature is the presentation of data for each species describing both the current distribution of that species and future suitable habitat based on climate change models.

### **Climate Change Resource Center**

U.S. Forest Service

<http://www.fs.fed.us/ccrc/>

The Climate Change Resource Center provides information about basic climate sciences and contains resources and support for adaptation and mitigation strategies. The site offers educational information, including basic science modules that explain climate and climate impacts, decision-support models, maps, simulations, case studies, toolkits, and videos.

### **Forests for the Next Century**

Forests for the Next Century

<http://rethinkforests.com/>

This website has information and several videos related to forest health, climate change, and carbon sequestration in wood products.

### **Forest Adaptation Resources: Climate Change Tools and Approaches for Land Managers**

Chris Swanston and Maria Janowiak, Editors; 2012

<http://www.nrs.fs.fed.us/pubs/40543>

This US Forest Service General Technical Report provides resources, including a workbook, to help forest managers incorporate climate change considerations into management and devise adaptation tactics.

### **Forest Management Solutions for Mitigating Climate Change in the United States**

Robert W. Malmshiemer et al., 2008

[www.ntc.blm.gov/krc/uploads/399/Forest%20Management%20Solutions%20for%20Mitigating%20Climate%20Change.pdf](http://www.ntc.blm.gov/krc/uploads/399/Forest%20Management%20Solutions%20for%20Mitigating%20Climate%20Change.pdf)

This *Journal of Forestry* article contains an executive summary and chapters related to preventing greenhouse gas emissions through wood substitution and biomass substitution, as well as reducing atmospheric greenhouse gases through sequestration in forests and storage in wood products.

### **PINEMAP**

Pine Integrated Network: Education, Mitigation, and Adaptation Project

<http://pinemap.org>

This website contains research summaries, newsletters, photos, webinars, and videos that describe current research related southern pine plantations and climate change.

### **Profile for Climate Change 2009**

United Nations Food and Agriculture Organization (FAO), 2009

<ftp://ftp.fao.org/docrep/fao/012/i1323e/i1323e00.pdf>

This document outlines how climate change will impact agricultural sectors and discusses priorities for adaptation and mitigation strategies for natural resources, including forests, around the world.

### **Template for Assessing Climate Change Impacts and Management Options (TACCIMO)**

U.S. Forest Service

[www.sgcp.ncsu.edu:8090](http://www.sgcp.ncsu.edu:8090)

This web-based tool, intended for use by land managers, provides the most current climate change projections and research in an effort to link science to forest management and planning. Features include a geospatial mapping application, a searchable listing of peer-reviewed literature, and guides explaining how to use TACCIMO.

### **Forests and Forest Management**

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#### **Eastern Forest Environmental Threat Assessment Center**

U.S. Forest Service

<http://forestthreats.org/climate-change>

The Eastern Forest Environmental Threat Assessment Center (EFETAC) is an interdisciplinary resource that is actively developing new technology and tools to anticipate and respond to emerging eastern forest threats. The site features resources about climate change and other significant environmental threats.

#### **Ecosystems on the Edge: Forests and Climate Change**

Smithsonian Environmental Research Center (SERC)

<http://ecosystemsontheedge.org/forests-and-climate-change/>

The Ecosystems on the Edge project aims to inform people about the effects of climate change on the planet and natural ecosystems. A 10-minute video shares information about carbon sequestration by forests and a research study that is tracking tree growth in Maryland.

#### **FAO Forestry**

Food and Agriculture Organization of the United Nations

<http://www.fao.org/forestry/en/>

This website provides access to publications, photos, videos, and other resources related to environmental, social, and economic aspects of Earth's forest resources. In particular, the *State of the World's Forests* and the *Global Forest Resources Assessments* reports provide a comprehensive look at the status, key issues, and trends of global forests.

#### **Forest Encyclopedia Network**

U.S. Forest Service Southern Research Station and Southern Regional Extension Forestry Office

[www.forestryencyclopedia.net](http://www.forestryencyclopedia.net)

This website has several encyclopedias that provide scientific knowledge and tools related to forest ecosystems and management.

#### **State Forestry Agencies in the Southeast**

Alabama Forestry Commission  
[www.forestry.state.al.us](http://www.forestry.state.al.us)

Arkansas Forestry Commission  
[forestry.arkansas.gov](http://forestry.arkansas.gov)

Florida Forest Service  
[www.floridaforestservice.com](http://www.floridaforestservice.com)

Georgia Forestry Commission  
[www.gfc.state.ga.us](http://www.gfc.state.ga.us)

Kentucky Division of Forestry  
[forestry.ky.gov](http://forestry.ky.gov)

Louisiana Department of Agriculture & Forestry  
[www.ldaf.state.la.us](http://www.ldaf.state.la.us)

Mississippi Forestry Commission  
[www.mfc.ms.gov](http://www.mfc.ms.gov)

North Carolina Division of Forest Resources

[www.ncforestservice.gov](http://www.ncforestservice.gov)

Oklahoma Forestry Services  
[www.forestry.ok.gov](http://www.forestry.ok.gov)

South Carolina Forestry Commission  
[www.state.sc.us/forest](http://www.state.sc.us/forest)

Tennessee Division of Forestry  
[www.tn.gov/agriculture/forestry](http://www.tn.gov/agriculture/forestry)

Texas Forest Service  
[txforestservice.tamu.edu](http://txforestservice.tamu.edu)

Virginia Department of Forestry  
[www.dof.virginia.gov](http://www.dof.virginia.gov)

#### **Stewardship Handbook for Family Forest Owners**

National Association of State Foresters, 2005

[www.stateforesters.org/stewardship\\_handbook](http://www.stateforesters.org/stewardship_handbook)

This handbook provides guidance for incorporating land management goals within a set of stewardship principles.

#### **Southern Forest Futures Project**

U.S. Forest Service

[www.srs.fs.usda.gov/futures](http://www.srs.fs.usda.gov/futures)

This website provides summary reports, a webinar, and other resources related to a multiyear research effort that forecasts changes in southern forests between 2010 and 2060.

#### **Southern Forests for the Future**

World Resources Institute

[www.seesouthernforests.org](http://www.seesouthernforests.org)

This website contains maps, photos, case studies, and other information that highlight key features and trends for southern forests.





## Formal and Nonformal Education Programs/ Lessons

### 2014 National Climate Assessment Resources for Educators

National Oceanic and Atmospheric Administration (NOAA)

<http://www.climate.gov/teaching/2014-national-climate-assessment-resources-educators>

This special webpage for teachers summarizes key points from the assessment and suggests ways that educators might use the assessment to teach about human impacts on the climate system.

### Buy, Use, Toss? A Closer Look at the Things We Buy

Facing the Future

[www.facingthefuture.org](http://www.facingthefuture.org)

This is a free interdisciplinary unit that includes ten fully planned lessons that explore the system of producing and consuming goods. Students learn about the five major steps of the materials economy: Extraction, Production, Distribution, Consumption, and Disposal. Students are asked to analyze the sustainability of these steps to determine how consumption can benefit people, economies, and environments.

### Climate Change: Connections and Solutions

Facing the Future

<http://www.facingthefuture.org/Curriculum/BuyCurriculum/ClimateChangeGrades912/tabid/454/Default.aspx>

This two-week curriculum unit for grades 9 through 12 encourages students to think critically about climate change

and to collaborate to devise solutions. Students learn about climate change within a systems framework, examining interconnections among environmental, social, and economic issues.

### Climate ChangeLIVE

U.S. Forest Service

<http://climatechangelive.org>

Climate ChangeLIVE offers webcasts, webinars, and other climate education resources that come directly from climate experts, educators, and students.

### Climate Change Wildlife, and Wildlands: A Toolkit for Formal and Informal Educators

U.S. Environmental Protection Agency

<http://www.globalchange.gov/browse/educators>

The kit is designed to help middle school classroom teachers and informal educators teach about how climate change is affecting wildlife and wildlands.

### Climate Education for K-12

State Climate Office, North Carolina State University

<http://www.nc-climate.ncsu.edu/edu/k12/>

This website is designed to help educators understand climate and weather concepts and to be able to incorporate the learning material from this site into their course curriculum using examples as aids for learning.

### Climate Literacy and Energy Awareness Network (CLEANET)

<http://cleanet.org/index.html>

The CLEAN collection is a small digital collection of teaching resources aligned with the *Essential Principles of Climate Literacy* and the *Energy Awareness Principles*. Each

teaching resource has been reviewed by scientists and educators for alignment with these principles first and then for scientific accuracy, pedagogic effectiveness, and usability.

### Coastal Areas Climate Change Education Partnership

<http://www.cacce.net/index.html>

This partnership of educators and scientists is creating innovative education programs for schools and organizations in Florida and the Caribbean to improve current and future generations' understanding of climate change and the local impacts. The website offers ways for educators to connect through a discussion group and provides information about middle and high school projects that have been completed.

### EarthSky

<http://earthsky.org/>

EarthSky specializes in reporting timely and compelling science news and information through short, daily radio shows.

### Educator Toolbox, Conservation Education

U.S. Forest Service

<http://www.fs.usda.gov/main/conservationeducation/educator-toolbox>

Follow the "Climate Change" link to find a collection of resources provided by the U.S. Forest Service, partners, and other trusted professionals.

### Educational Global Climate Modeling (EdGCM)

<http://edgcm.columbia.edu/>

EdGCM provides a Global Climate Model with a user-friendly interface that allows students to explore the subject of climate change through tools used by climate science researchers.



### **Environmental Literacy and Inquiry (ELI) Climate Change**

<http://www.ei.lehigh.edu/eli/cc/>

In this middle school science inquiry curriculum, students can use geospatial information technology tools, web-based tools, and inquiry-based lab activities to investigate important climate change topics.

### **EE Link, Climate Change**

North American Association for Environmental Education

<http://eelink.net/pages/Climate+Change>

Links on this webpage go to activities and materials dealing with climate change, global warming, and environmental policy.

### **Exploring Climate Change**

National Energy Education

Development Project (NEED), 2010

<http://www.need.org/files/curriculum/guides/ExploringClimateChange.pdf>

This set of nine activities is designed to teach students in grades 9 through 12 about the science behind climate change, the relationship between energy use and climate change, and personal choices that can be made to address climate change.

### **Forest Health Education**

School of Forest Resources and Conservation, University of Florida

<http://sfrc.ufl.edu/extension/ee/foresthealth.html>

This site provides resources and information to help educators incorporate forest health into their lessons and activities. *What Is a Healthy Forest?* is a middle school supplement that contains 5 new activities and extensions to 13 Project Learning Tree PreK–8 activities.

*Beyond the Trees* is a set of six lesson plans for high school educators to convey forest health concepts using a systems thinking framework. All the materials are available as free downloads.

### **i-Tree Learning Lab: Using i-Tree in the Classroom**

Urban Natural Resources Institute, U.S. Forest Service

<http://www.unri.org/learninglab/>

This curriculum uses urban forest inventory and assessment tools, developed through the U.S. Forest Service i-Tree program, to teach students about ecosystem services of trees such as carbon sequestration, energy savings, and clean air and water benefits.

### **GLOBE Carbon Cycle**

University of New Hampshire

<http://globecarboncycle.unh.edu/index.shtml>

This education unit focuses on bringing cutting edge research, and research techniques, in the field of terrestrial ecosystem carbon cycling into secondary classrooms. It includes several activities to help students understand the carbon cycle, including an option to create your own pathway for a carbon molecule.

### **Job Corps Climate Change Curriculum**

U.S. Forest Service

[http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5212126.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5212126.pdf)

The hands-on activities in this high school level curriculum were designed to introduce Job Corps students to the science and impacts of climate change.

### **MetEd**

<https://www.meted.ucar.edu/index.php>

This free resource for atmospheric science education contains hundreds of formal sessions and offers distance education and continuing education credits.

### **Natural Inquirer Science Education Journal**

U.S. Forest Service

<http://www.naturalinquirer.org/Natural-Inquirer-Climate-Change-Articles-v-80.html>

The *Natural Inquirer* is a middle-school science education journal that is based on U.S. Forest Service research. Many issues have articles related to climate change, and all resources are available for download or you can order free copies.

### **Teaching about Climate Change**

National Science Teachers Association

[http://learningcenter.nsta.org/products/symposia\\_archive\\_sponsor.aspx?page=USFS](http://learningcenter.nsta.org/products/symposia_archive_sponsor.aspx?page=USFS)

This section of the NSTA Learning Center website contains archives from forest-related climate change symposiums and webinars.

### **Will Steger Foundation Education Resources**

<http://willstegerfoundation.org/programs/k-12-education-program>

The Will Steger Foundation offers lesson plans, videos, images, professional development opportunities, and other resources to support educators, students and the public with science-based interdisciplinary educational resources on climate change and its implications and solutions to achieve climate literacy.