

Introduction to the Climate Change Resource Center



Climate Change
Resource Center

www.fs.usda.gov/ccrc/

What is the CCRC?

The screenshot shows the homepage of the Climate Change Resource Center. At the top left are the USDA and Forest Service logos. The main navigation bar includes links for ABOUT, CLIMATE BASICS, TOPICS, TOOLS, VIDEOS, CLIMATE PROJECTS, and LIBRARY. A featured section on the left highlights the benefits of healthy trees and forests. On the right, there is a 'Recent Additions' list and a 'Why Forests and Climate Change?' section with a 'Start here' link. The bottom right corner features a link for those interested in silviculture and climate change.

USDA **FOREST SERVICE** United States Department of Agriculture | FRONT **Forest Service** Climate Change Resource Center

FS Home | About Us | News | Jobs | Maps


Search

CLIMATE CHANGE RESOURCE CENTER

ABOUT | CLIMATE BASICS | TOPICS | TOOLS | VIDEOS | CLIMATE PROJECTS | LIBRARY

Featured

Healthy trees and forest provide neighborhoods with a host of climate-related benefits.



Recent Additions

- [State of the Climate, 2012 >](#)
- [Climate Change 2013: The Physical Science Basis >](#)
- [Carbon Management Issue - Sustainable Landscapes in a World of Change >](#)
- [Impacts of climate change on biodiversity, ecosystems, and ecosystem services >](#)
- [Carbon Budget 2013 >](#)

Why Forests and Climate Change?

[Start here >](#)

Interested in silviculture and climate change? Visit our topic page. >



What is the CCRC?

The screenshot shows the homepage of the Climate Change Resource Center. At the top left, there are logos for USDA and the United States Forest Service, along with the text "United States Department of Agriculture | FRONT Climate Change Resource Center". To the right, there are navigation links: "FS Home | About Us | News | Jobs | Maps" and a search bar with a "Search" button. Below the header is a large banner image of a forest at sunset with the text "CLIMATE CHANGE RESOURCE CENTER". Underneath the banner is a green navigation bar with the following menu items: "ABOUT", "CLIMATE BASICS", "TOPICS", "TOOLS", "VIDEOS", "CLIMATE PROJECTS", and "LIBRARY". The main content area features a large text box with the text: "A web-based, national resource that connects land managers with useable science to address climate change in planning and application." Below this text box, there are several smaller images and text blocks. On the left, there is a text block that says "Healthy trees and neighborhoods with a host of climate-related benefits." Below this is a large image of a person walking on a path through a forest. On the right, there are several smaller text blocks, including "State of the Climate", "Carbon Management Issue - Sustainable Landscapes in a World of Change", "Impacts of climate change on biodiversity, ecosystems, and ecosystem services", and "Carbon Budget 2013". At the bottom right, there is a circular icon with a line graph and the text "Why Forests and Climate Change? Start here >". Below this is another text block that says "Interested in silviculture and climate change? Visit our topic page. >".

A web-based, national resource that connects land managers with useable science to address climate change in **planning and application.**

Healthy trees and neighborhoods with a host of climate-related benefits.



Why Forests and Climate Change?

Start here >



Interested in silviculture and climate change? Visit our topic page. >

What is the CCRC?

- Focuses on climate change **impacts** on forests and grasslands, and approaches to **adaptation** and **mitigation**.
- Identifies credible, science-based resources that are relevant to managers.
- Synthesizes complex topics into digestible formats.

Featured

How does a warming climate contribute to yellow-cedar decline?



What is the CCRC?

A joint effort of:

- The Forest Service Office of the Climate Change Advisor, FS Research and Development, and USDA.
- Representative of all U.S. regions.
- Responsive to needs identified by land managers.



The CCRC Production Team (2014)

- **Chris Swanston** (NRS) – eastern co-chair
 - **Sarah Hines** (RMRS) – western co-chair
 - **Andy Alm** (PNW/METI)
 - **Doug Beebe** (PNW)
 - **Joe Smith** (WO)
 - **Kailey Marcinkowski** (NIACS)
 - **Rhonda Mazza** (PNW)
 - **Cindy Miner** (PNW)
 - **Kristen Schmitt** (NIACS)
 - **Perdita Spriggs** (SRS)
 - **Stephanie Worley-Firley** (EFETAC)
 - **Kate Zook** (USDA)
-



CCRC Long-Term Vision

Partner with the **USDA Climate Hubs** and **other federal agencies** to serve as a national, interagency source of relevant, high-quality information on climate change and forest and grassland management.

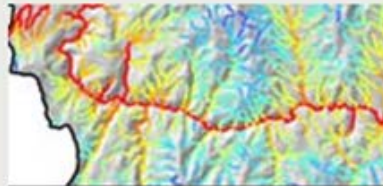
Featured Tools



EcoSmart Landscapes

The public ecoSmart Landscapes tool can be used to calculate carbon dioxide sequestration and building energy savings provided by individual trees.

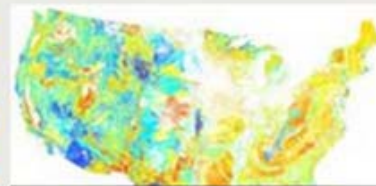
[Read More >](#)



NorWeST Stream Temperature

NorWeST aggregates stream temperature data from the Northwestern U.S. and uses them to develop stream temperature models.

[Read More >](#)



LANDFIRE

LANDFIRE (Landscape Fire and Resource Management Planning Tools) is a vegetation, fire and fuel characteristics mapping program.

[Read More >](#)



A Brief Site Tour

The screenshot shows the homepage of the USDA Forest Service Climate Change Resource Center. At the top left, the USDA and Forest Service logos are displayed alongside the text "United States Department of Agriculture Forest Service". To the right, the site title "Climate Change Resource Center" is shown, along with navigation links for "FS Home", "About Us", "News", "Jobs", and "Maps". A search bar is located in the top right corner.

The main header features a large image of a forest with the text "CLIMATE CHANGE RESOURCE CENTER" overlaid. Below this is a horizontal navigation menu with the following categories: ABOUT, CLIMATE BASICS, TOPICS, TOOLS, VIDEOS, CLIMATE PROJECTS, and LIBRARY.

The "Featured" section is highlighted with an orange banner. It contains a large image of a tree trunk with the text "An interactive education module on Climate Change Science and Modeling" and a diagram of the Earth showing arrows representing climate change impacts. Below this are four smaller thumbnail images: a map of North America, a landscape view, a forest scene, and a person walking on a path.

The "RECENT ADDITIONS" section lists several articles with links:

- USDA 'Climate Hubs' Announced >
- Tree carbon accumulation >
- Climate change and North American rangelands >
- Climate Change Tree and Bird Atlas Update >
- Carbon Management Issue - Sustainable Landscapes in a World of Change >

Below the recent additions is a section titled "Why Forests and Climate Change?" with a "Start here >" link. At the bottom right, there is a section titled "How can forests adapt to climate change?" with a "See some examples >" link.

A Brief Site Tour

Basic climate change information and education:

ABOUT

CLIMATE BASICS

TOPICS

TOOLS

VIDEOS

CLIMATE PROJECTS

LIBRARY

Managing for Change
Climate Change Education
Climate Science Primer
Climate FAQs

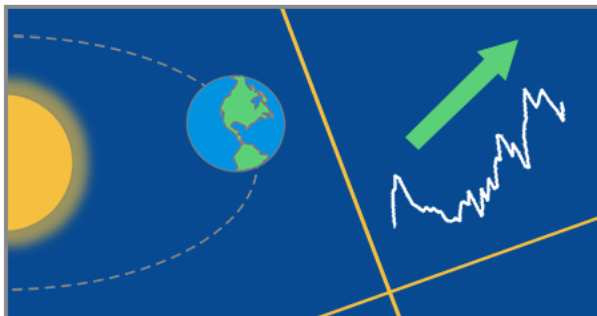
Table Of Contents

Slide Title

Topic Name

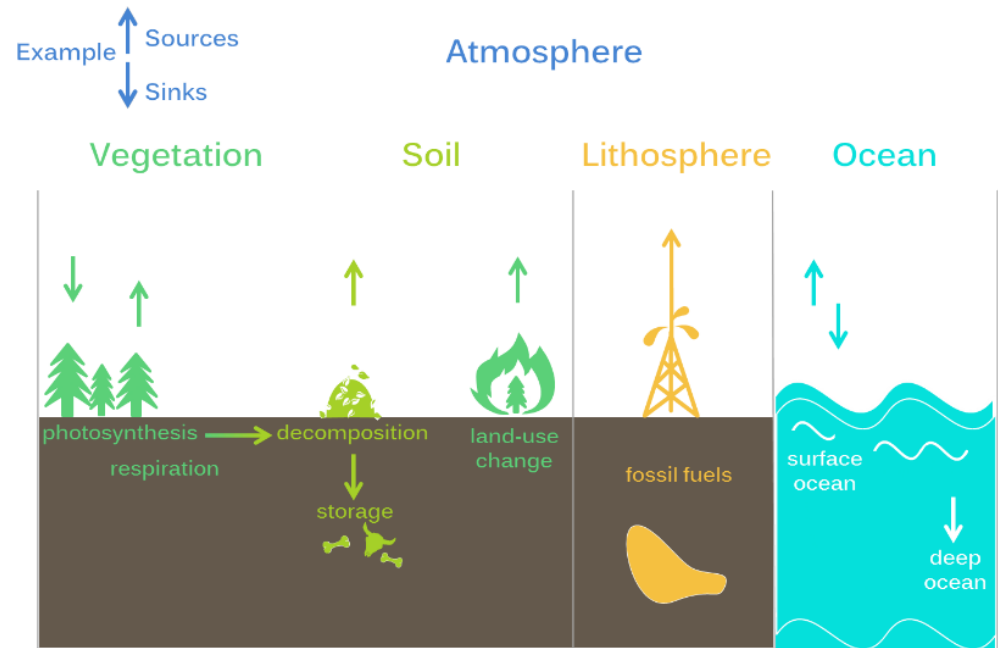
- Introduction
- Weather and Climate
- Temperature Trends
- Milankovitch Cycle
- Greenhouse Gas Ca...
- Main Greenhouse Ga...

Click here to begin the module.



- ect
- ations
- tion ...
- arios

Activity
08:55 / 22:57 Minutes



A Brief Site Tour

Basic climate change information – new feature:

ABOUT

CLIMATE BASICS

TOPICS

TOOLS

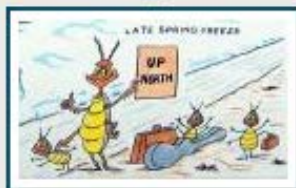
VIDEOS

CLIMATE PROJECTS

LIBRARY

Featured

How will climate change affect forests? Watch this video to learn the basics.



A Brief Site Tour

Topic pages – syntheses and recommended resources from experts

ABOUT

CLIMATE BASICS

TOPICS

TOOLS

VIDEOS

CLIMATE PROJECTS

LIBRARY

Featured Topics



Urban Forests

Healthy trees and forests provide neighborhoods with a host of climate related benefits.

[Read More >](#)



Wildland Fire

Climate change is likely to alter atmospheric patterns and weather.

[Read More >](#)



Forest Tree Diseases and Climate Change



[Overview](#)

[Synthesis](#)

[Reading](#)

[Research](#)

[Tools](#)

[Links](#)

Overview

Forest tree diseases are often caused by infectious pathogens such as fungi and bacteria. Changing climate conditions can influence the spread of infectious diseases and their carriers, and add stresses to trees, making them more susceptible to diseases. Tree disease can also be caused by abiotic conditions such as air pollution, though this page deals primarily with biotic factors.

Read the synthesis paper to learn more about these climate-disease interactions and how management strategies can address the potential shifting patterns of tree disease.

Related page: [Insect Disturbance](#)

Follow the tabs above to learn more about this topic.

A Brief Site Tour

Tools & tools guidance

ABOUT

CLIMATE BASICS

TOPICS

TOOLS

VIDEOS

CLIMATE PROJECTS

LIBRARY

Climate Change and Carbon Tools

Introduction

The CCRC lists tools that are intended to help land managers incorporate climate change and carbon stewardship into their decision-making. Tools included on the CCRC may range from specialized calculators to maps or models covering a variety of scales and geographical regions. All tools have limitations and assumptions that need to be considered. The CCRC does not recommend specific tools, but does provide guidance on appropriate tool applications. Please be sure to thoroughly examine these before interpreting tool outputs.

To access datasets, please visit the [Climate Data](#) page which will point you to the organizations responsible for providing these to the public.

Find the Right Tool

Use these filters to help find the tools you need.

Browse Tools

[All Tools](#) | [FS Tools](#) | [Non-FS Tools](#)

Tool Use

Geography

Apply



LANDFIRE products can describe changes in vegetation conditions across the United States.

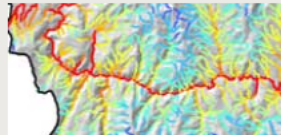
Featured Tools



EcoSmart Landscapes

The public ecoSmart Landscapes tool can be used to calculate carbon dioxide sequestration and building energy savings provided by individual trees.

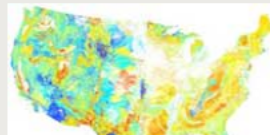
[Read More >](#)



NorWeST Stream Temperature

NorWeST aggregates stream temperature data from the Northwestern U.S. and uses them to develop stream temperature models.

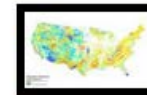
[Read More >](#)



LANDFIRE

LANDFIRE (Landscape Fire and Resource Management Planning Tools) is a vegetation, fire and fuel characteristics mapping program.

[Read More >](#)



A Brief Site Tour

Video Lectures

ABOUT

CLIMATE BASICS

TOPICS

TOOLS

VIDEOS

CLIMATE PROJECTS

LIBRARY

BROWSE BY THEME

Adaptation

Case Studies

Climatology

Forests and Carbon

Modeling

Vegetation

Water and Fish

CCRC Video Library



A Changing Climate in the West

In the Northwest, temperature increases, decreases in snowfall events and declining April snowpack are examples of recent trends. Philip Mote discusses the climate system and patterns of variability.

Presenter: Philip Mote



A Line Officer's Perspective

If you are unsure about where to begin integrating climate change into natural resource planning, you are not alone. This presentation offers some useful suggestions.

Presenter: Scott Fitzwilliams



A multi-phase approach to assessing potential changes in Eastern US tree distributions

An overview of a set of tools that assess how climate change might influence tree distributions in the eastern U.S.

Presenter: Louis Iverson



Adapt, move or die: spatially explicit assessment of climate change

A Brief Site Tour

Video Lectures

ABOUT

CLIMATE BASICS

TOPICS

TOOLS

VIDEOS

CLIMATE PROJECTS

LIBRARY

BROWSE BY THEME

Adaptation

Case Studies

Climatology

Forests and Carbon

Modeling

Vegetation

Water and Fish

CCRC Video Library



A Changing Climate in the West

In the Northwest, temperature increases, decreases in snowfall events and declining April snowpack are examples of recent trends. Philip Mote discusses the climate system.

Presented by



A Line

If you are a resource manager, suggest

Presented by



A multi-tree d

An overview of distribution

Presented by



Adapt

Understanding and Adapting To Climate Change in Aquatic Ecosystems at Landscape and River Basin Scales

Fish population response to climate change

Fish population response to climate change

Seth Wenger
Trout Unlimited

Introduction
Acknowledgments
Climate
Stream Temperature and Flow Regime
Catastrophic Events
Landscape Context
Biotic Interactions
Human Interactions
Or (more or less) equivalently
Temperature and fish
Timing: migrations, spawning, incubate
Flow and fish: low flows
Flow and fish: high flows
Flow and fish: high flows
Flow and fish: high flows
Flow and fish: high flows

A Brief Site Tour

Climate Projects



Considering Climate Change in Forest Plan Revision on the Uwharrie National Forest

Fast Facts | Description | **Photos and Video** | Additional Resources



The Uwharrie plans to restore more longleaf pine to the landscape. Longleaf pine seedlings are pictured here.

← Adaptation examples

Stories →

Research ↓

MANAGEMENT CONNECTIONS

At Stream Edge

Steve Moore is a fisheries biologist and land manager in the Great Smoky Mountains National Park in East Tennessee.



See an interview with Steve Moore.

A Land Manager Restores Native Trout

Land managers often act as the



Soil carbon dynamics in peatlands: PEATcosm

Northern Research Station

Project website: http://www.nrs.fs.fed.us/clean_air_water/carbon_sequestration/mesocosm/

What is Next?

Coming soon on the CCRC:

- More outreach and education materials:
 - Two more education modules.
 - Part II of the whiteboard animation video series – “Planning for change.”
 - New tools, topic pages, and adaptation examples:
 - Climate change and NEPA analysis (topic page).
 - Forest Plan Revision on the Francis Marion (adapt. Example)
 - Geographical search capabilities.
 - More integration with USDA Climate Hubs.
-



Contact Us!

- If something is missing, we want to know!
- Get in touch with us at ccrc@fs.fed.us or kmschmit@mtu.edu, or contact any member of the Production Team.



Thank You

