

The Climate Change Resource Center

Information and Tools for Land Managers



Climate Change Resource Center

www.fs.fed.us/ccrc/

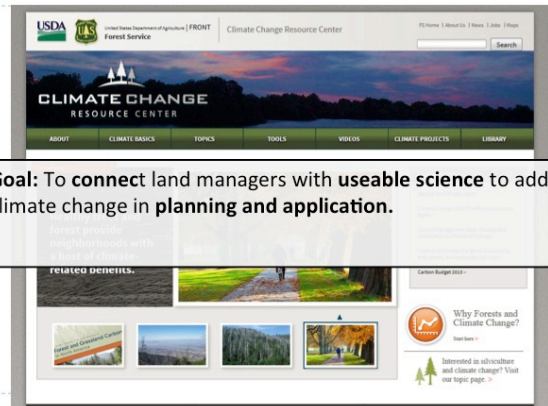
Outline

- What is the CCRC?
- A brief tour of the website
- In-depth look at Topics – Amphibians and climate change
- In-depth look at Tools – *ForWarn*
- In-depth look at courses and education
- What's next?

What is the CCRC?

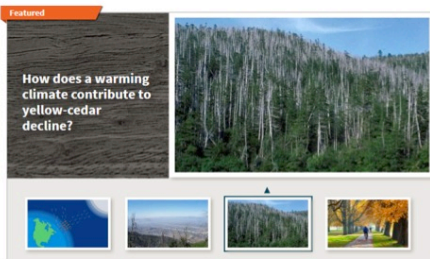


What is the CCRC?



What is the CCRC?

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



What is the CCRC?

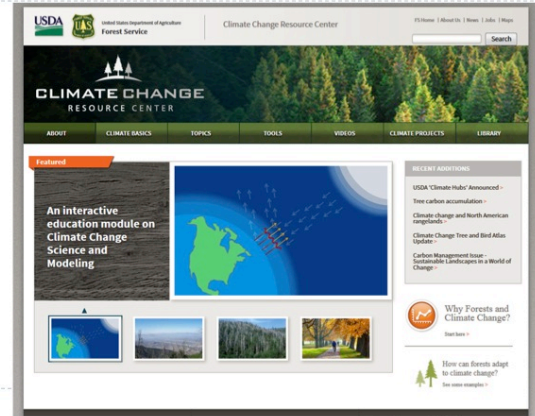
- A joint effort of:
 - The Forest Service Office of the Climate Change Advisor and Research and Development.
 - Representative of all U.S. regions.
 - Responsive to needs identified by land managers.



Outline

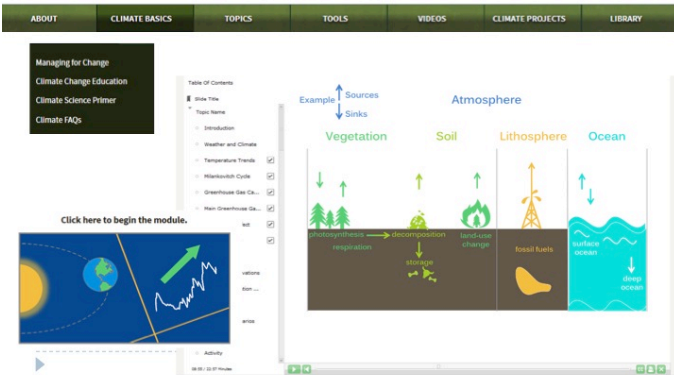
- ✓ What is the CCRC?
- A brief tour of the website
- In-depth look at Topics – Amphibians and climate change
- In-depth look at Tools – *ForWarn*
- In-depth look at courses and education
- What's next?

A Brief Site Tour



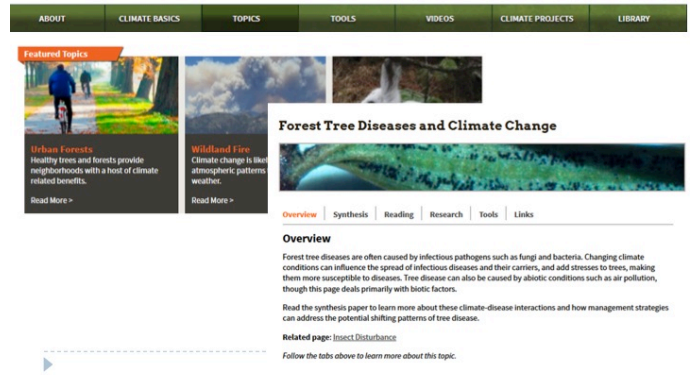
A Brief Site Tour

Basic climate change information and education:



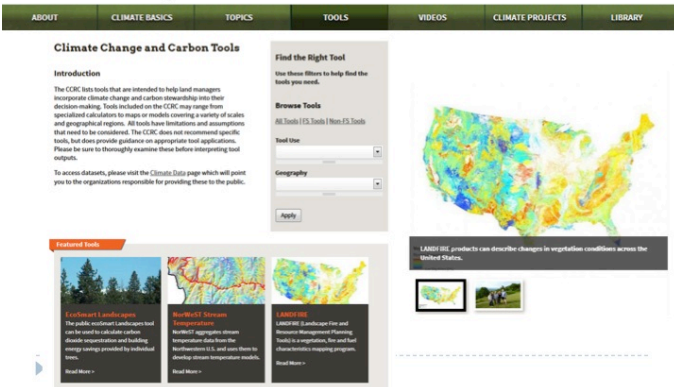
A Brief Site Tour

Topic pages – syntheses and recommended resources from



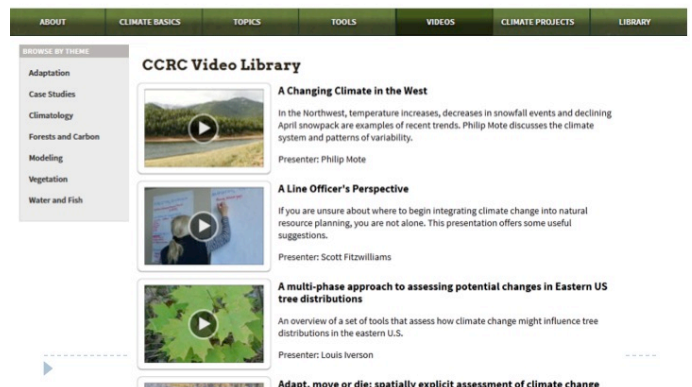
A Brief Site Tour

Tools & tools guidance



A Brief Site Tour

Video Lectures



A Brief Site Tour

Video Lectures

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. Phillip Mote discusses the climate system.

A Line
If you a resource suggests

A mul tree d
An even distrib

A Brief Site Tour

Climate Projects

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

Adaptation examples

Stories

Research

Soil carbon dynamics in peatlands: PEATCoSM
Northern Research Station
Project website: http://www.nrs.fs.fed.us/clean_air_water/carbon_sequestration/mesocosm/

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

A Land Manager Restores Native Trout
Land managers often act as the

Outline

- ✓ What is the CCRC?
- ✓ A brief tour of the website
- In-depth look at Topics – Amphibians and climate change
- In-depth look at Tools – *ForWarn*
- In-depth look at courses and education
- What's next?

In-depth look - Topics

Amphibians and Climate Change -

<http://www.fs.fed.us/ccrc/topics/wildlife/amphibians/>

Issues:

- High vulnerability to climate change – global decline plus basic biology.

Likely changes:

- Altered hydroperiods - early drying of ponds and streams; altered phenology – risk of freezing, drying, predation.



In-depth look - Topics

Management options for amphibians

1) Actively managing moisture regimes:

- Vegetation management, riparian buffers.

2) More engineered approaches:

- Irrigation, sprinklers, water pumps.

3) Landscape connectivity, site protection.

4) Reintroduction, Relocation, Translocation, and Headstarting (RRTH).



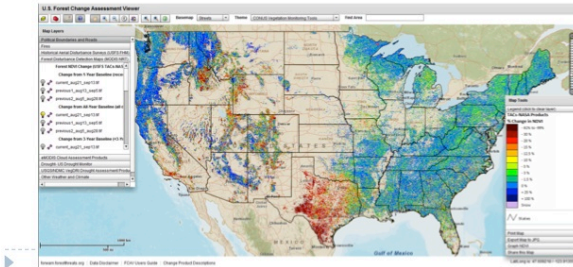
Outline

- ✓ What is the CCRC?
- ✓ A brief tour of the website
- ✓ In-depth look at Topics – Amphibians and climate change
- In-depth look at Tools – *ForWarn*
- In-depth look at courses and education
- What's next?

In-depth look - Tools

ForWarn - www.fs.fed.us/ccrc/tools/forwarn.shtml

- Uses satellite data to detect forest disturbances.
- Compares current 'greenness' to a similar 24-day period of time during a historical baseline.

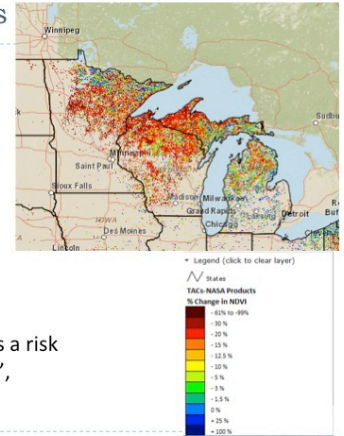


In depth look - Tools

ForWarn

CCRC guidance would describe:

- Required inputs
- Scale of output/use
- Training requirement
- Status (e.g. beta testing)
- Potential applications



Caveats – with *ForWarn*, there is a risk of detecting a 'false disturbance', since the tool is sensitive to identifying change.

Outline

- ✓ What is the CCRC?
- ✓ A brief tour of the website
- ✓ In-depth look at Topics – Amphibians and climate change
- ✓ In-depth look at Tools – *ForWarn*
 - In-depth look at courses and education
 - What's next?

In-depth look – Courses

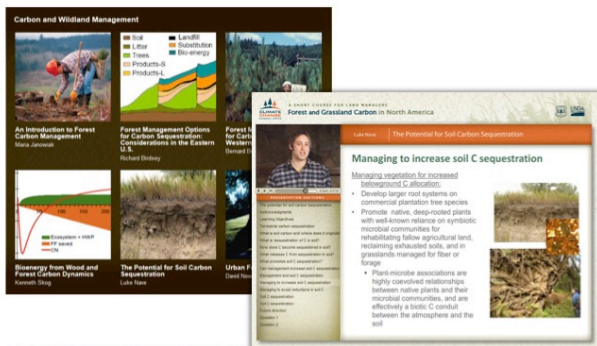
Forest and Grassland Carbon in North America: a short course for land managers - www.fs.fed.us/ccrc/carboncourse/

- Curriculum developed to give land managers a background on carbon cycling science and mitigation options.



In-depth look – Courses

Forest and Grassland Carbon in North America



In-depth look – Courses



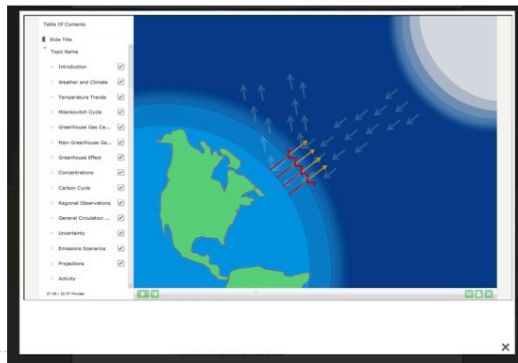
Land managers can affect soil carbon sequestration by:

- Managing to **increase** soil carbon sequestration -
 - Developing larger root systems on plantation tree species.
 - Promoting native, deep-rooted plants for rehabilitating lands.
 - Nitrogen fertilization.

- Managing to **avoid losses** in soil carbon sequestration -
 - Decreasing erosion.
 - Avoiding draining wetlands with large organic deposits.
 - Reducing intensive tillage or compaction.

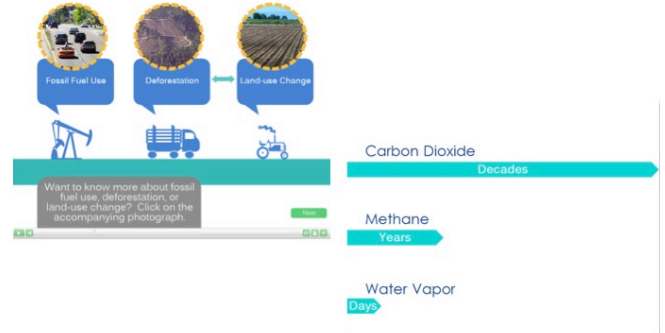
In-depth look – Courses

Climate Change Science and Modeling: What You Need to Know



In-depth look – Courses

Climate Change Science and Modeling: What You Need to Know



Outline

- ✓ What is the CCRC?
- ✓ A brief tour of the website
- ✓ In-depth look at Topics – Amphibians and climate change
- ✓ In-depth look at Tools – *ForWarn*
- ✓ In-depth look at courses and education
 - What's next?

What is Next

Coming soon on the CCRC:

- More outreach and education materials:
 - Two more education modules
 - Illustrated outreach videos
- Guiding principles for NEPA analysis
- Improved ability to find regionally-specific information.



Key Points

- Explore the CCRC for information related to climate change and land management.
- Materials range from general to specific in scope; can be used by the general public or natural resource specialists.
- Resources are science-based and reviewed for credibility.
- If something is missing, we want to know!
- Get in touch with us at ccrc@fs.fed.us or kmschmit@mtu.edu



Thank You

