USDA Forest Service Climate Change Education Modules: Something for Everyone

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Kailey Marcinkowski
Northern Institute of Applied Climate Science
Michigan Technological University

Chris Swanston
Kristen Schmitt

Climate Change Resource Center
www.fs.usda.gov/ccrc/
Northern Institute of Applied Climate Science

Climate
Carbon

Provides practical information, resources, and technical assistance related to forests and climate change

Regional multi-institutional partnership among:

NIACS
U.S. Forest Service
Michigan Technological University
The Trust for Public Land
ncasi
Great Lakes Indian Fish & Wildlife Commission
University of Vermont
University of Minnesota
Education Modules

www.fs.usda.gov/ccrc/education

Climate Change: What You Need to Know
Employee Education

1. Are all employees provided with training on the basics of climate change, impacts on forests and grasslands, and the Forest Service response?

Fill a need for basic climate change education in National Forests units
Forest Service Curriculum

Climate Change Advisor’s Office
Climate Change Education and Training Team

- Key concepts
- Templates and formats for training
- Extra resources, materials, and videos
- Available on climate change advisor intranet
- AgLearn Assessment
A short course of study that together with other completed courses counts towards a particular qualification.

- Short Course
- Interactive
- Online
- Relevant Activity
- Best Available Science
- Useful

www.fs.usda.gov/ccrc/education
Something for Everyone: More than a 101

- Pop-up boxes
- Outside links
- Citation links
- Graphics and animations
- Scientific graphs

- Clarifying information
- Learning relevant facts
- Providing definitions
- Introducing credible sources

the gap
basic expert
Climate Change Science and Modeling

By the end of this module, users should know:

• Difference between weather and climate
• Main greenhouse gases
• Greenhouse effect
• Carbon cycle
• Observed climate change impacts by region
• Climate models and the uncertainty
• Emissions scenarios storylines and representative concentration pathways
• Projected future climate impacts
Climate Change Science and Modeling
Climate Change Effects on Forests and Grasslands

By the end of this module, users should know:

- Interactions between climate change effects
- Variations in observed and projected changes around the country
- Changes in precipitation patterns
- Phenological changes and growing season length
- Carbon dioxide fertilization
- Changes in vegetation and wildlife habitat ranges
- Disturbances like insects, invasives, and wildfire
Climate Change Effects on Forests and Grasslands

The Coconino National Forest in central Arizona has been experiencing a rapid decline in its aspen population.

- The recent aspen decline is large scale, affecting many aspen stands in the Southwest. The decline is mainly attributed to severe droughts.
- Many parts of the Southwest, including the Coconino National Forest, experienced a very warm drought period in the late 1990s. This was followed by episodes of insect activity.
- Regeneration in aspen stands has been low for over a century in many parts of the Southwest due to heavy browsing by livestock and wild ungulates and the encroachment of conifers into aspen understory.
- Aspen mortality was 95% in dry low-elevation sites on the Coconino National Forest, compared to 61% on the mid-elevation sites.
- The Coconino National Forest is currently working on the Hart Prairie Fuels Reduction and Forest Health Project. This project will restore over 300 acres of aspen in the Forest.
- Restoration efforts for aspen include removal of encroaching conifers, prescribed fire, planting, and fencing.

For more information visit the Coconino National Forest.
Responses to Climate Change

By the end of this module, users should know:

- Adaptation options: resistance, resilience, and transition
- Differences and similarities between resistance, resilience, and transition
- Benefits and risks for adaptation options
- The adaptation planning process
- Mitigation options for land management
- Differences between adaptation, mitigation, and restoration
Responses to Climate Change

The Nature Conservancy
Adaptation Forestry in Minnesota’s Northwoods

The Minnesota Northwoods Project is located on a mix of federal, state, and county land in northeast Minnesota and is a collaboration of several different organizations. The project area features mostly boreal species such as aspen and white spruce. The main goal of this project is to try alternative silvicultural strategies to promote diverse forest-stand structures and incorporate new tree species and genotypes through planting.

- Projected climate change effects for the area include increased temperature and more drought stress during the growing season, along with shorter winters and less snowfall.
- The current adaptation approach includes establishing a new mix of native species through plantings of tree seedlings projected to be better suited for future climate. All species being planted (such as burr oak) are native to the region and are anticipated to thrive under future climate.
- The overall adaptation option for the Northwoods Project can be considered a transition option, because planting promotes a change in forest composition that will likely be better suited for expected climate effects.

For current project status and more information, visit the Adaptation Forestry in Minnesota’s Northwoods demonstration summary.
Quiz-like Activity

User-directed • Regionally focused • Feedback messages • Personalized certificate

“Responding to a Changing Climate and its Effects on Forests and Grasslands”
Something for Everyone: Partnerships

- A Framework for Building Climate Literacy and Capabilities among Federal Natural Resource Agencies
- Department of Navy
- Department of Defense
Something for Everyone: DON

CCRC + NFCH + DON CECOS

- Naval Civil Engineer Corps Officer School environmental training
- Facilitate education module + add more info
- Mixed audience
- Interest in sea level rise
- Beaches
Something for Everyone: DOD

CCRC + NFCH + DON = DOD partnership

- Natural resource compliance course with climate adaptation workshop
- “Guest” expert speakers from the region
- Intro to adaptation concepts and processes
- Activities to identify challenges, benefits to climate change, brainstorm adaptation strategies, approaches, and tactics for a management scenario
Something for Everyone
Something for Everyone

Watch!
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New Module!
Responses to Climate Change: What You Need to Know PNW-GTR-955 publishing is in process.
Thank you!

Questions?

Kailey Marcinkowski
kfmarcin@mtu.edu
kfmarcinkowski@fs.fed.us

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