

Tools and Resources for Tribal Climate Adaptation Planning

Sue Wotkyns

Institute for Tribal Environmental Professionals
Northern Arizona University



National Adaptation Forum
April 3, 2013, Denver, CO

Presentation Overview

- Overview of ITEP
- ITEP's climate change training and resources for tribes
- Resources from other organizations
- Tribal networks/groups focused on climate change



Institute for Tribal Environmental Professionals (ITEP)

- Northern Arizona University, Flagstaff, AZ
- Mission: ITEP serves tribes through outstanding, culturally-relevant education and training that increase environmental capacity and strengthen sovereignty
- In 20 years, ITEP has served over 500/566 tribes nationally
- ITEP Programs: Climate Change, Air Quality, Waste Management, K-16 Environmental Education and Outreach, Tribal Clean Energy Resource Center



San Francisco Peaks, Flagstaff, AZ



Climate Change Training

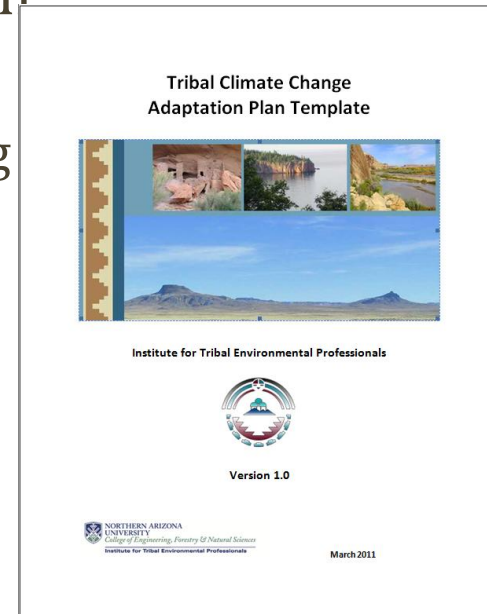
- ***Climate Change Adaptation Planning***
 - 3 trainings/yr. in different regions
 - 3-days long, approx. 20 participants, plus team of instructors
 - Process of adaptation planning; tools and resources
 - Talking Circles, presentations and tribal case studies, discussions, activity (computer-based), field trip
 - Supported by US EPA cooperative agreement



Climate Change Adaptation Planning – Pueblo of Santa Ana, NM, February 2013

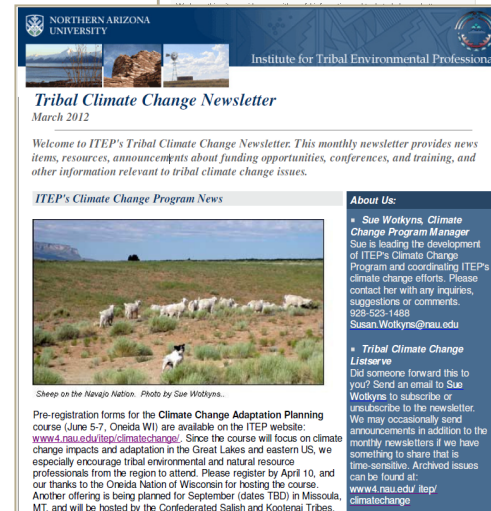
Templates

- Tribal Climate Change Adaptation Plan Template
 - Guidelines and suggestions for writing an adaptation plan
 - Key terms, additional resources
- Template for a Tribal Resolution: Climate Change Adaptation Initiative
 - Template and 4-page guide
 - Focused on establishing a climate change adaptation initiative for tribe
- Available by request:
susan.wotkyns@nau.edu



Website and Newsletter

- Tribes & Climate Change Website
 - Basic info, Tribal Profiles, Resources Library, and more
 - <http://www4.nau.edu/tribalclimatechange/>
- Tribal Climate Change Newsletter
 - Delivered monthly by email
 - ITEP CC Program News, In the News, Technical Resources, Funding Opportunities, Upcoming Events
 - Sign up by sending email to: susan.wotkyns@nau.edu



Climate Change Webinars

- AK-focused quarterly webinars, in collaboration with USEPA Reg.10
- Other webinars -- general tribal audience
- Archived at:
http://www4.nau.edu/itep/climatechange/tcc_webinars.asp



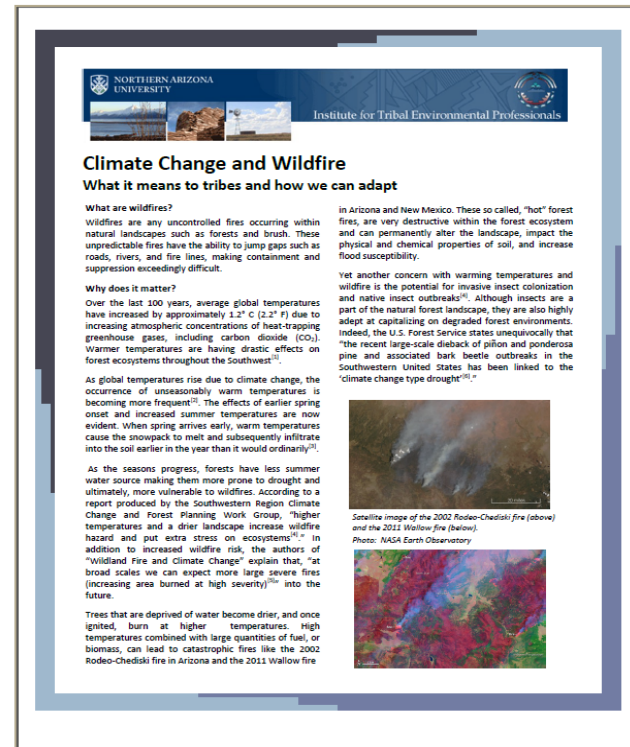
Climate Change Outreach Materials

Climate Change Fact Sheets

- 2-page
- Focused on impacts and adaptation strategies
 - Drought
 - Invasive Species
 - Wildfire
- Under development in collaboration with University of Oregon
 - Fisheries
 - Forestry
 - Water Resources
 - And more...

Available at:

http://www4.nau.edu/itep/climatechange/tcc_SWProj.asp



NORTHERN ARIZONA UNIVERSITY
Institute for Tribal Environmental Professionals

Climate Change and Wildfire

What it means to tribes and how we can adapt

What are wildfires?
Wildfires are any uncontrolled fires occurring within natural landscapes such as forests and brush. These unpredictable fires have the ability to jump gaps such as roads, rivers, and fire lines, making containment and suppression exceedingly difficult.

Why does it matter?
Over the last 100 years, average global temperatures have increased by approximately 1.2° C (2.2° F) due to increasing atmospheric concentrations of heat-trapping greenhouse gases, including carbon dioxide (CO₂). Warmer temperatures are having drastic effects on forest ecosystems throughout the Southwest¹¹.


As global temperatures rise due to climate change, the occurrence of unseasonably warm temperatures is becoming more frequent¹². The effects of earlier spring onset and increased summer temperatures are now evident. When spring arrives early, warm temperatures cause the snowpack to melt and subsequently infiltrate into the soil earlier in the year than it would ordinarily¹³.

As the seasons progress, forests have less summer water source making them more prone to drought and ultimately, more vulnerable to wildfires. According to a report produced by the Southwestern Region Climate Change and Forest Planning Work Group, "Higher temperatures and a drier landscape increase wildfire hazard and put extra stress on ecosystems"¹⁴. In addition to increased wildfire risk, the authors of "Wildland Fire and Climate Change" explain that, "at broad scales we can expect more large severe fires (increasing area burned at high severity)"¹⁵ into the future.

Trees that are deprived of water become drier, and once ignited, burn at higher temperatures. High temperatures combined with large quantities of fuel, or biomass, can lead to catastrophic fires like the 2002 Rodeo-Chediski fire in Arizona and the 2011 Wallow fire

In Arizona and New Mexico, these so-called, "hot" forest fires, are very destructive within the forest ecosystem and can permanently alter the landscape, impact the physical and chemical properties of soil, and increase flood susceptibility.

Yet another concern with warming temperatures and wildfire is the potential for invasive insect colonization and native insect outbreaks¹⁶. Although insects are a part of the natural forest landscape, they are also highly adept at capitalizing on degraded forest environments. Indeed, the U.S. Forest Service states unequivocally that "the recent large-scale dieback of piñon and ponderosa pine and associated bark beetle outbreaks in the Southwestern United States has been linked to the 'climate change type drought'"¹⁷.



Satellite image of the 2002 Rodeo-Chediski fire (above) and the 2011 Wallow fire (below)

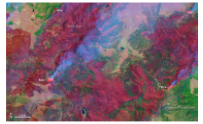


Photo: NASA Earth Observatory

Resources from other organizations

Univ. of Oregon's PNW Tribal Climate Change Project:

- Tribal Climate Change Funding and Program Guide

<http://tribalclimate.uoregon.edu/funding-guide/>

- Exploring the Role of Traditional Ecological Knowledge in Climate Change Initiatives

http://tribalclimate.uoregon.edu/files/2010/11/TEK_Climate_Synthesis_Oct-12-1nkf2o3.pdf



Resources from other organizations

- Promoting Generations of Self-Reliance - Stories and Examples of Tribal Adaptation to Change (US EPA)
http://www.epa.gov/region10/pdf/tribal/stories_and_examples_of_tribal_adaptation_to_change.pdf
- Climate Change Planning Tools for First Nations Guidebooks (Centre for Indigenous Environmental Resources)
<http://www.yourcier.ca/information-and-resources/publications-and-products.aspx?id=412>
- Native Communities and Climate Change (Univ. of Colorado)
<http://www.tribesandclimatechange.org/index.php>

Tribal networks/groups focused on climate change

- National Tribal Science Council:
<http://www.epa.gov/osp/tribes/who.htm>
- American Indian Alaska Native Climate Change Working Group:
<http://aianccwg.ning.com/profile/146mfvc6wl8v9>
- First Stewards: <http://firststewards.org/>
- ONR (Our Natural Resources): <http://www.ournaturalresources.org/>
- Northwest Tribal Climate Change Network:
<http://tribalclimate.uoregon.edu/network/>
- Southwest Tribal Climate Change Network:
http://www4.nau.edu/itep/climatechange/tcc_SWProj.asp
- LEO—Local Environmental Observer Network:
<http://www.anthc.org/chs/ces/climate/leo/about.cfm>

Many tribal environmental/natural resources conferences include climate change sessions.

Contact Information

Sue Wotkyns

Climate Change Program Manager

Institute for Tribal Environmental Professionals

928-523-1488

Susan.Wotkyns@nau.edu

For more information about ITEP, please visit our website:

<http://www4.nau.edu/itep/>