Delivering Climate Change Information in the Forest Service

Dr. Cynthia West, Executive Director Office of Sustainability and Climate

Presentation Overview:

- OSC Digital Strategy
  - Websites
  - Digital Newsletter and Bulletins
  - Regional Drought Summaries
  - Map Galleries
  - Story Maps
  - Managed Data Services
- Questions and Answers

Digital Strategy

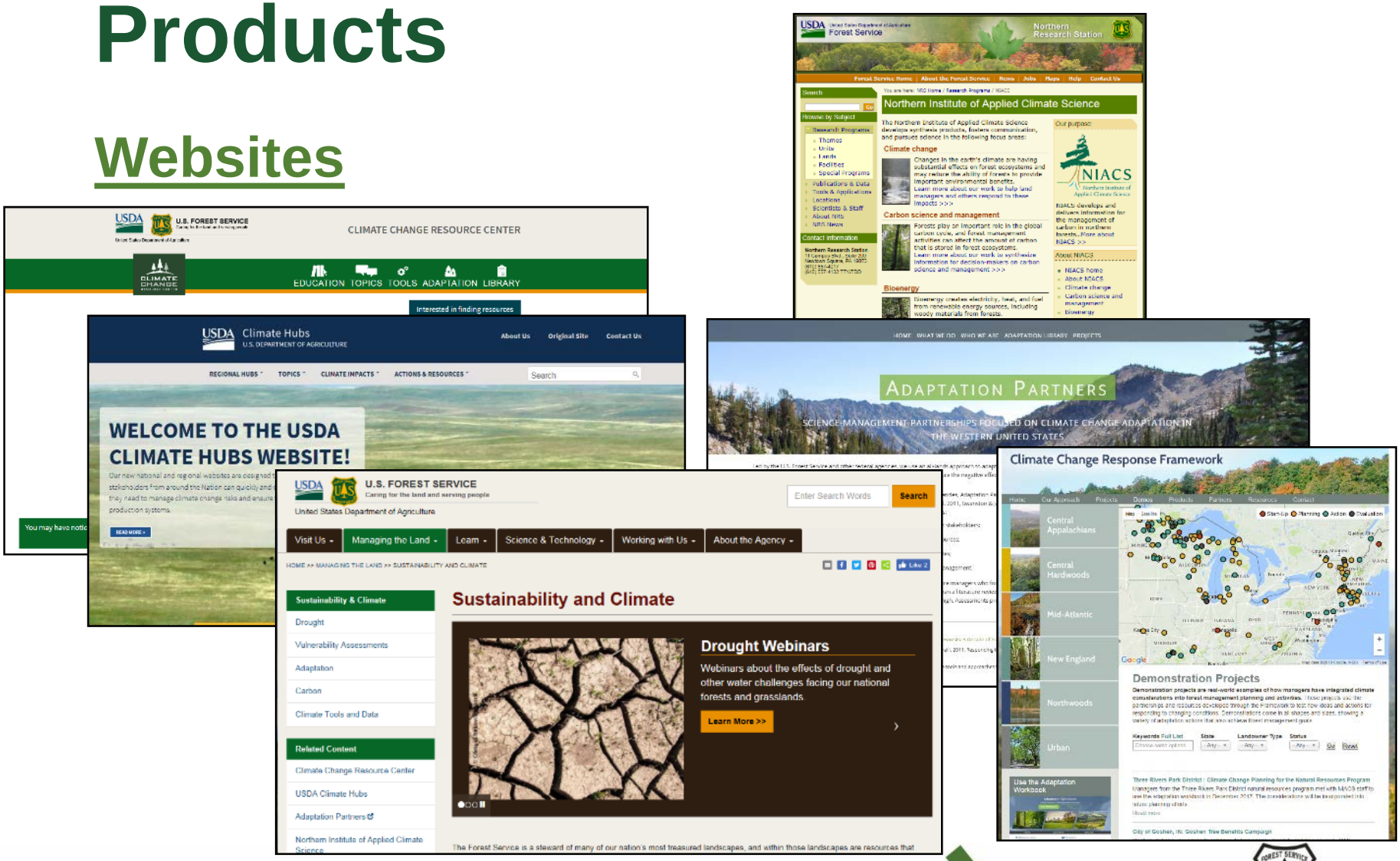
Discoverability and consistency

Science-based

Trusted information that is kept current and updated

Communication and Data Products

Websites



Communication and Data Products

Digital Newsletter and Bulletins

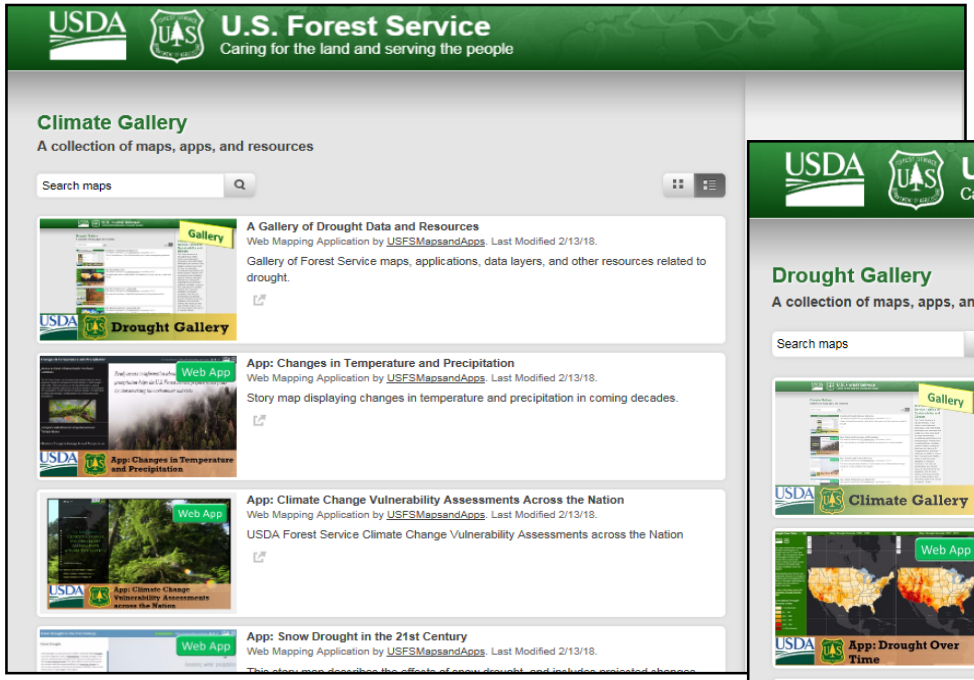
- Subscription based electronic newsletter and bulletins.
- Send an email to: **oscc@fs.fed.us** to be added to the distribution list.

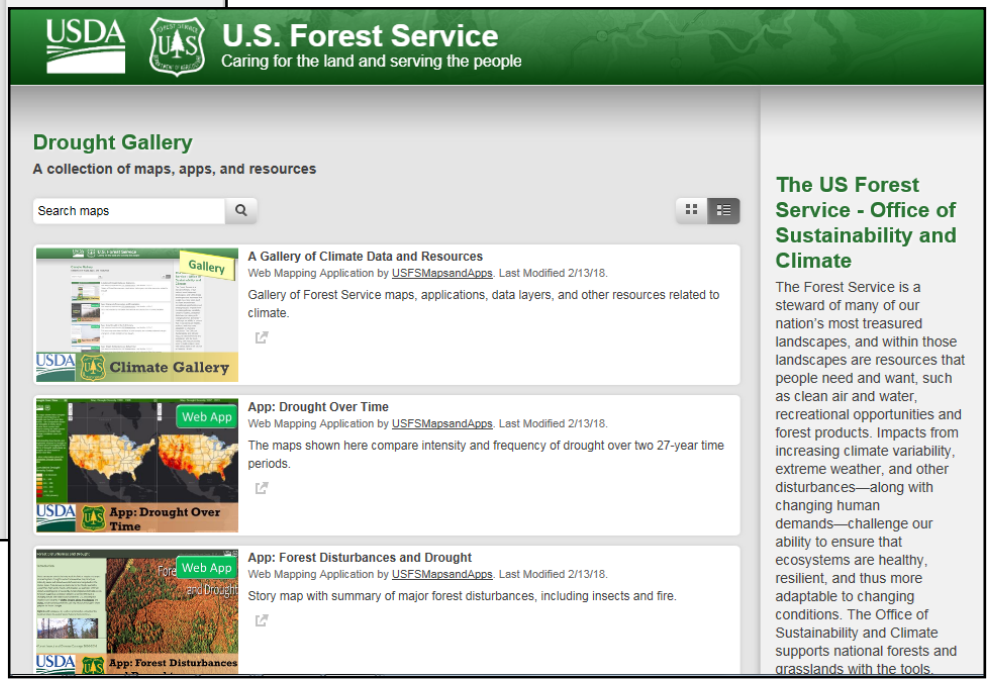
Communication and Data Products

Regional Drought Summaries

Communication and Data Products

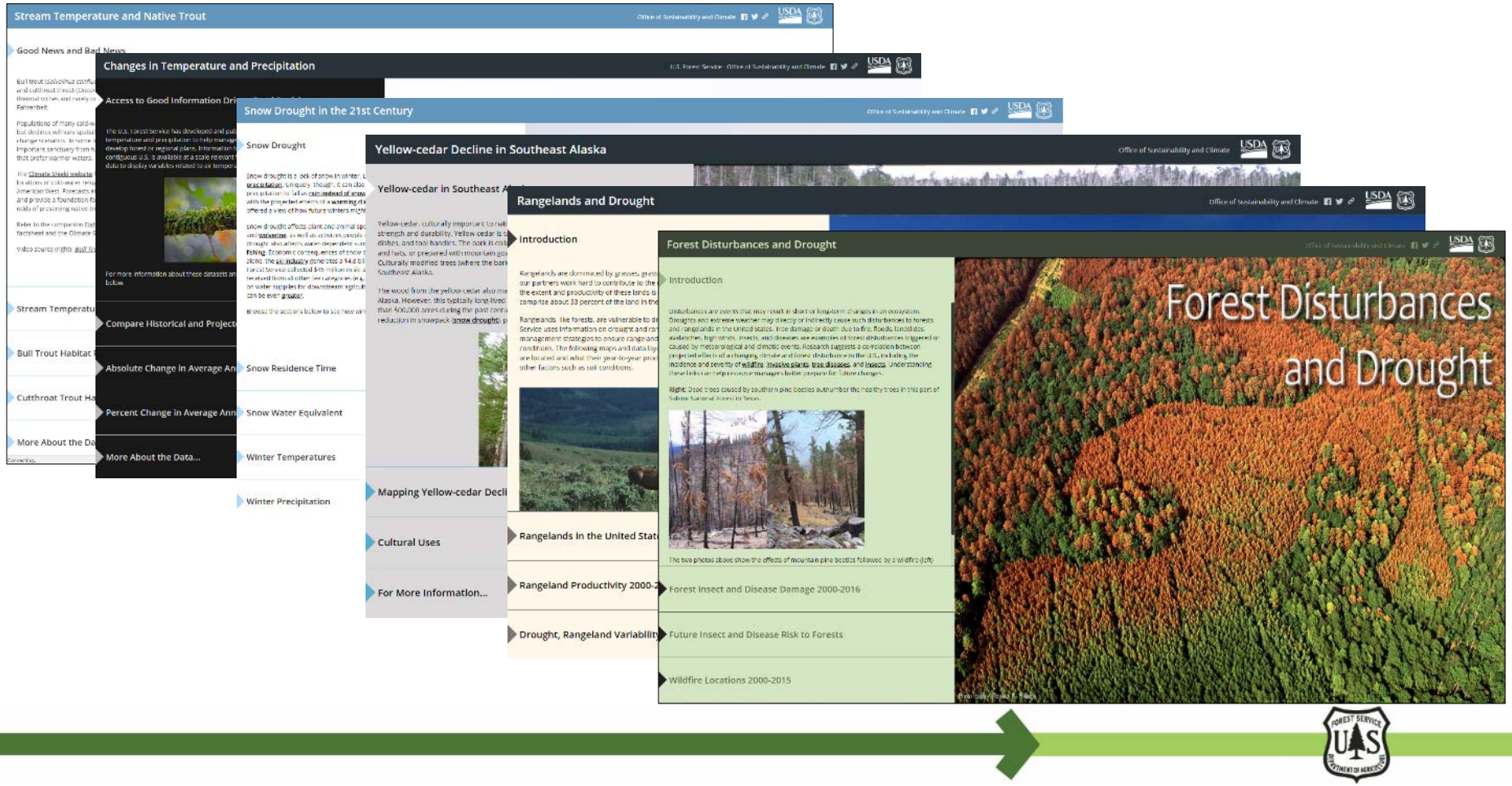
Map Galleries



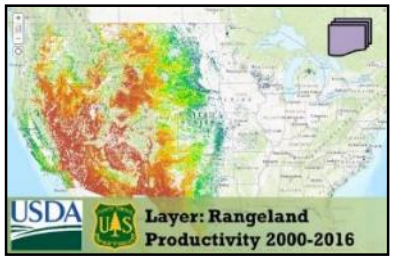


Communication and Data Products

Story Maps



Managed Data Services



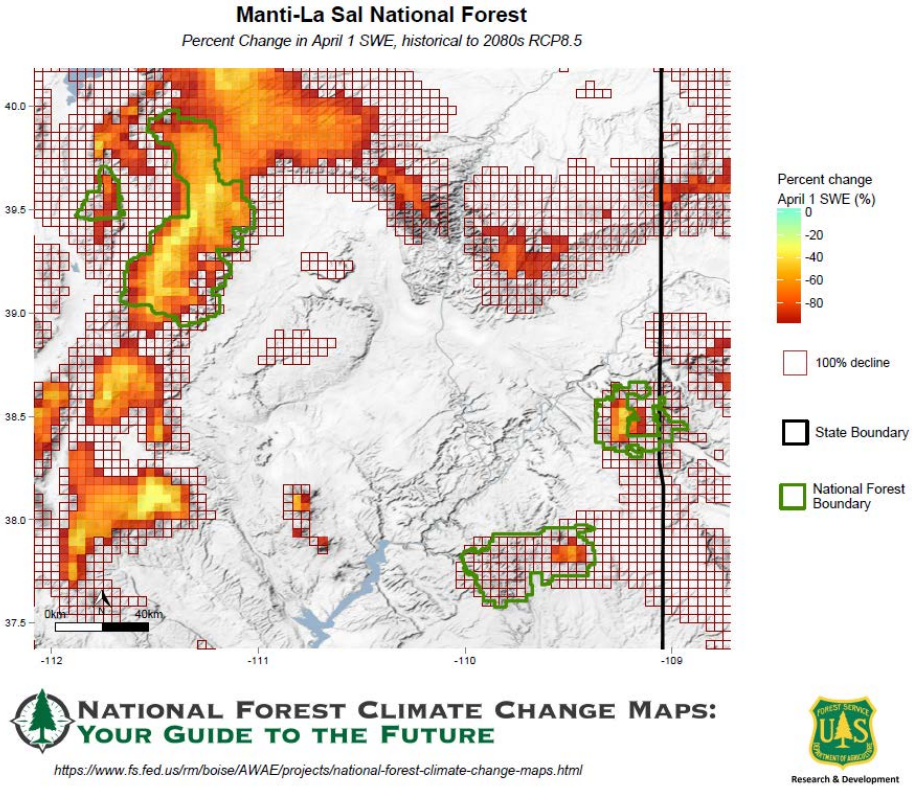
Questions and Answers

Drought gallery: https://tinyurl.com/y973s6rn
Climate gallery: https://tinyurl.com/y7makrbm

Climate Change Maps Project

Intermountain Region – Climate Assessment Workshop

May 23, 2018



National Forest Climate Change Maps: Your Guide to the Future

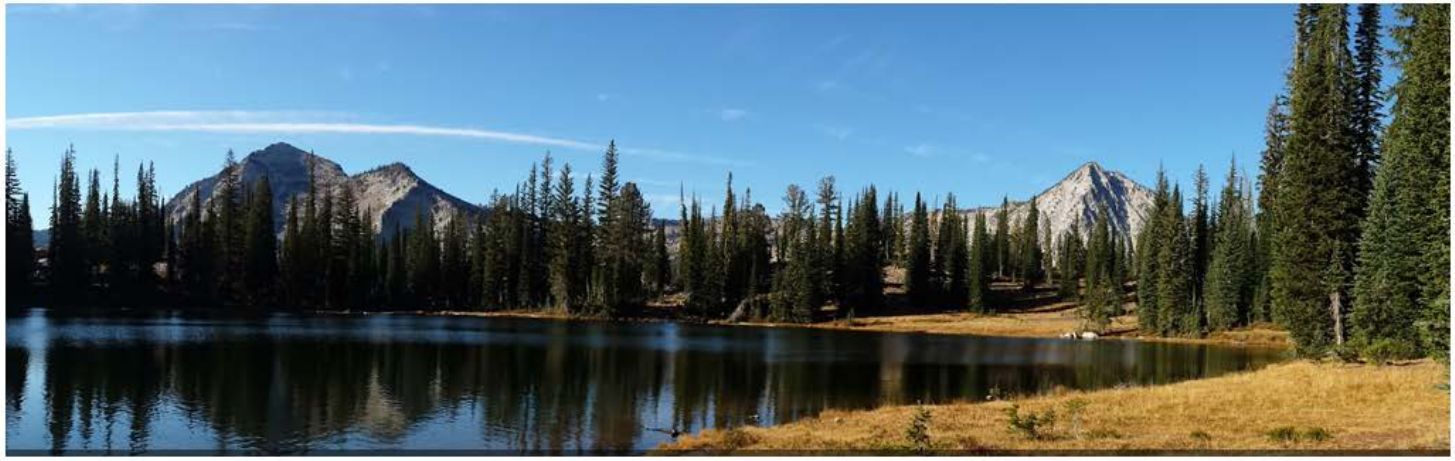
https://www.fs.fed.us/rm/boise/AWAE/projects/national-forest-climate-change-maps.html

Research & Development

Charles Luce, PhD

Research Hydrologist

US Forest Service Research



NATIONAL FOREST CLIMATE CHANGE MAPS: YOUR GUIDE TO THE FUTURE

The National Forest Climate Change Maps project was developed to meet the need of National Forest managers for information on projected climate changes at a scale relevant to decision making processes, including Forest Plans. The maps use state-of-the-art science and are available for every National Forest in the contiguous United States with relevant data coverage. Currently, the map sets include variables related to precipitation, air temperature, snow (including April 1 snow water equivalent (SWE), and snow residence time), and stream flow. More maps will continue to be added so be sure to check back! Contact Charles Luce at **cluce@fs.fed.us** for more information.

Climate Change Maps by National Forest

- Northern Region (Region 1)
- Rocky Mountain Region (Region 2)
- Southwest Region (Region 3)
- Intermountain Region (Region 4)
- Pacific Southwest Region (Region 5)
- Pacific Northwest Region (Region 6)

Ready-to-Go PDF Files by Forest

Metrics Available

- Temperature
- Precipitation
- Snow Water Equivalent
- Snow Residence Time
- Streamflow
  - Mean annual
  - Floods
  - Center of timing
  - More
- Metadata

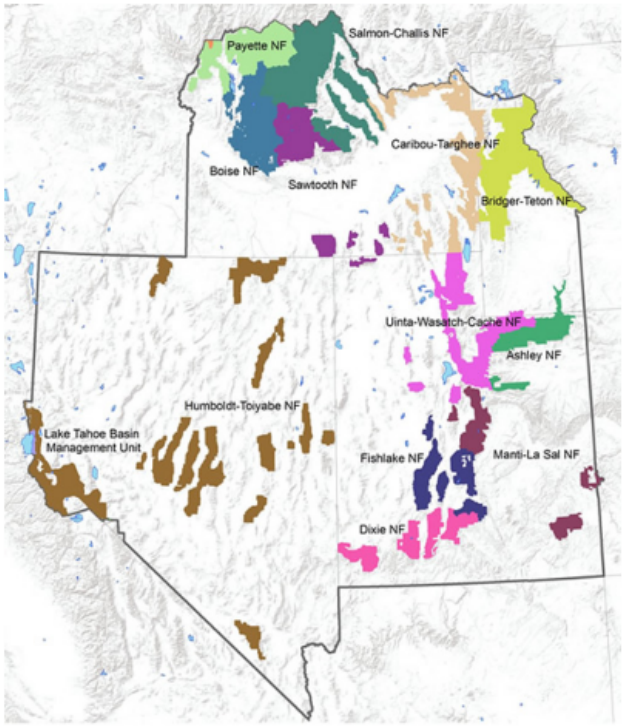
Maps & Data

- Historical
- 2080s (some to 2040s, too)
- Absolute Change
- Percent Change

- Also as 4-km raster data over CONUS for T, P, Snow
- Streamflow available as .dbf to link with NHDPlus V2

https://www.fs.fed.us/rm/boise/AWAE/projects/national-forest-climate-change-maps.html

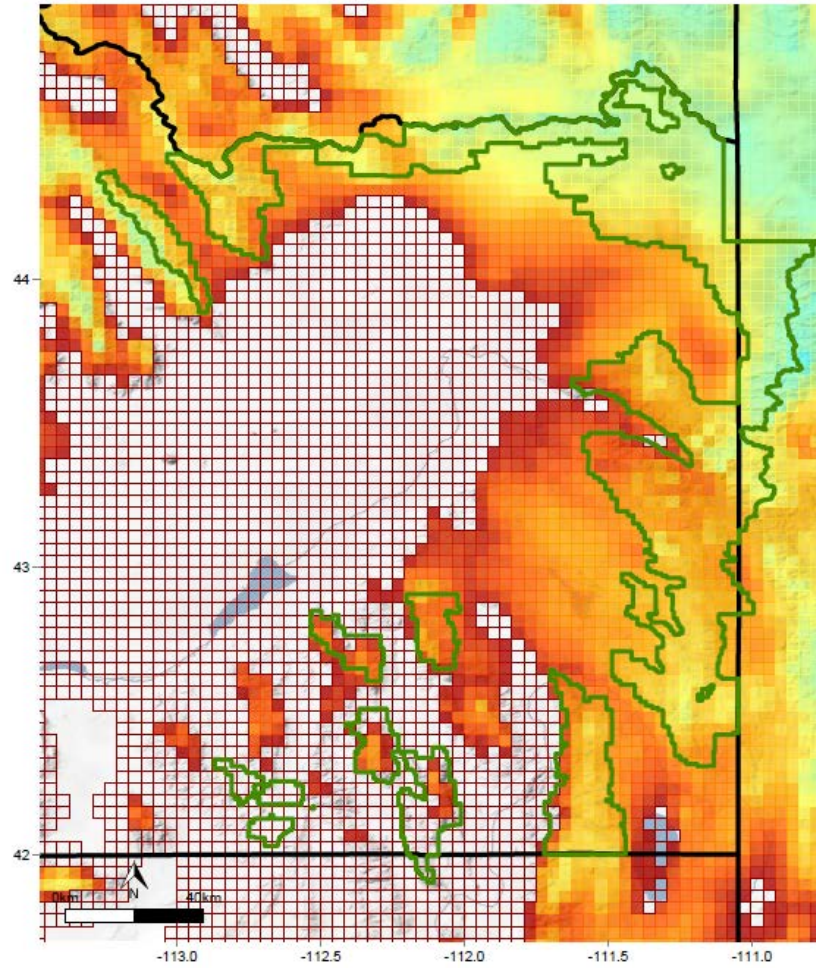
National Forest Climate Change Maps: Your Guide to the Future



Region 4 Forests	Downloads - Which maps are available to download?
Ashley National Forest	Precipitation | Trout | Snow | Streamflow Metrics | Air Temperature | Stream Temperature
Boise National Forest	Precipitation | Trout | Snow | Streamflow Metrics | Air Temperature | Stream Temperature
Bridger-Teton National Forest	Precipitation | Trout | Snow | Streamflow Metrics | Air Temperature | Stream Temperature
Caribou-Targhee National Forest	Precipitation | Trout | Snow | Streamflow Metrics | Air Temperature | Stream Temperature
Dixie National Forest	Precipitation | Trout | Snow | Streamflow Metrics | Air Temperature | Stream Temperature
Fishlake National Forest	Precipitation | Trout | Snow | Streamflow Metrics | Air Temperature | Stream Temperature
Humboldt-Toiyabe National Forest	Precipitation | Trout | Snow | Streamflow Metrics | Air Temperature | Stream Temperature

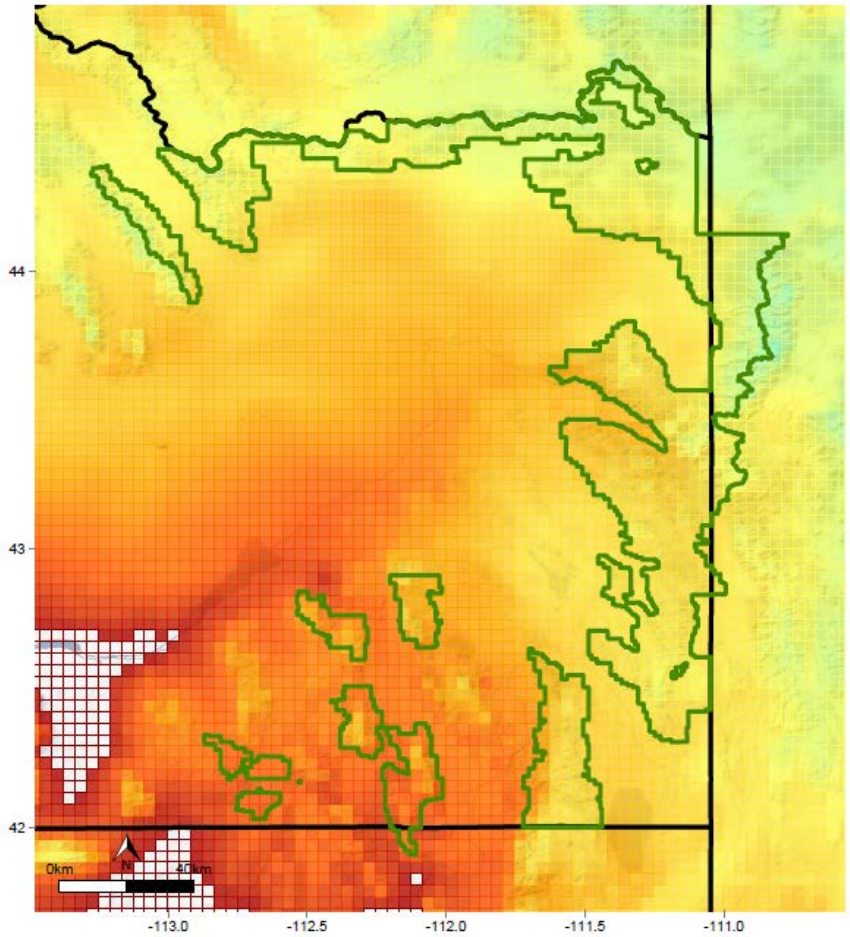
Caribou-Targhee National Forest

Percent Change in April 1 SWE, historical to 2080s RCP8.5



Caribou-Targhee National Forest

Percent Change in Snow Residence Time, historical to 2080s RCP8.5



Percent change Snow Residence Time (%)

0
-20
-40
-60
-80

100% decline

State Boundary

National Forest Boundary

NATIONAL FOREST CLIMATE CHANGE MA
YOUR GUIDE TO THE FUTURE

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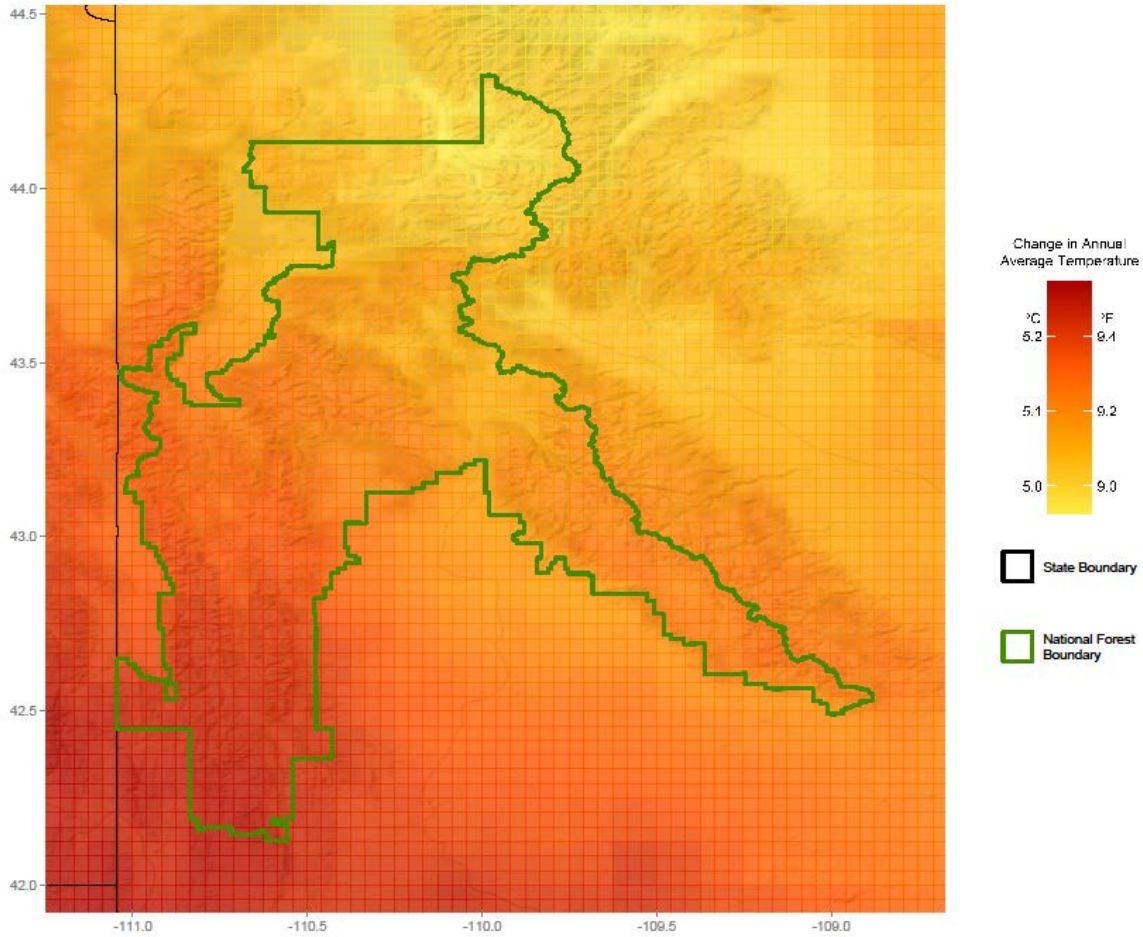
Research & Development

Bridger-Teton National Forest

Change in Annual Average Temperature, historical to 2080s RCP8.5



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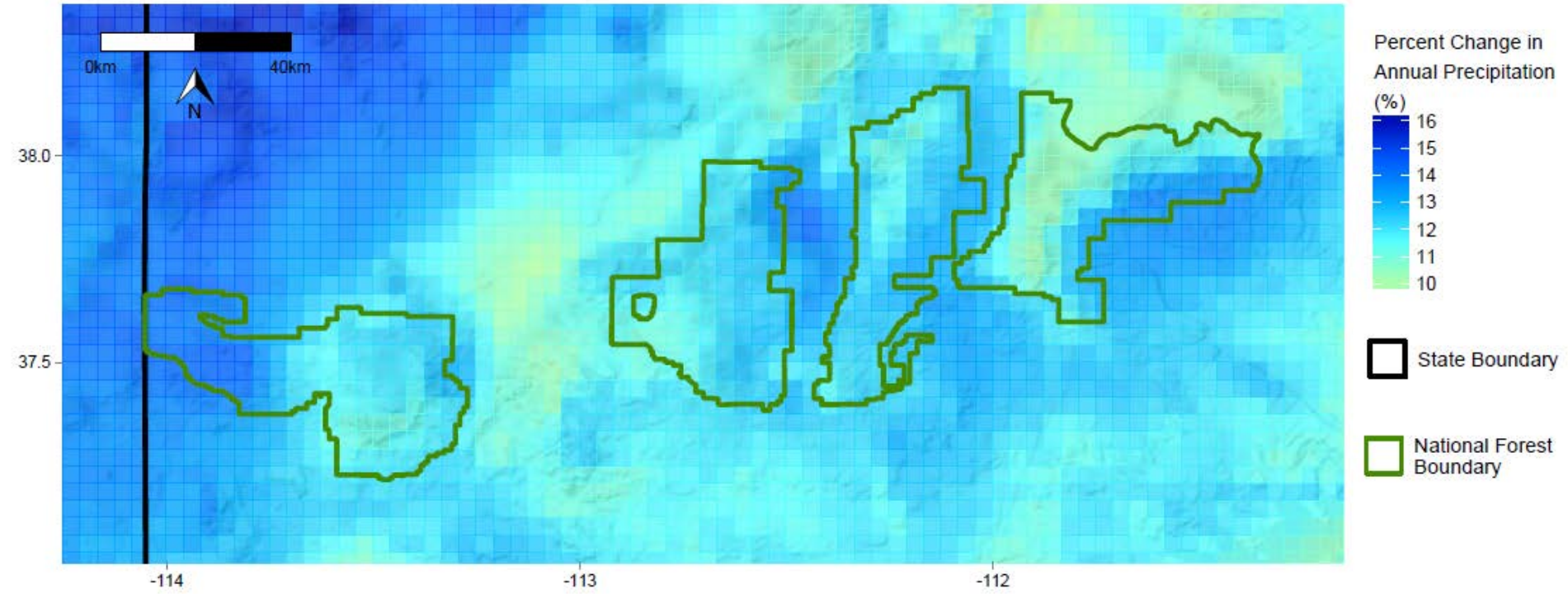
Research & Development

Dixie National Forest

Percent Change in Annual Precipitation, historical to 2080s RCP8.5



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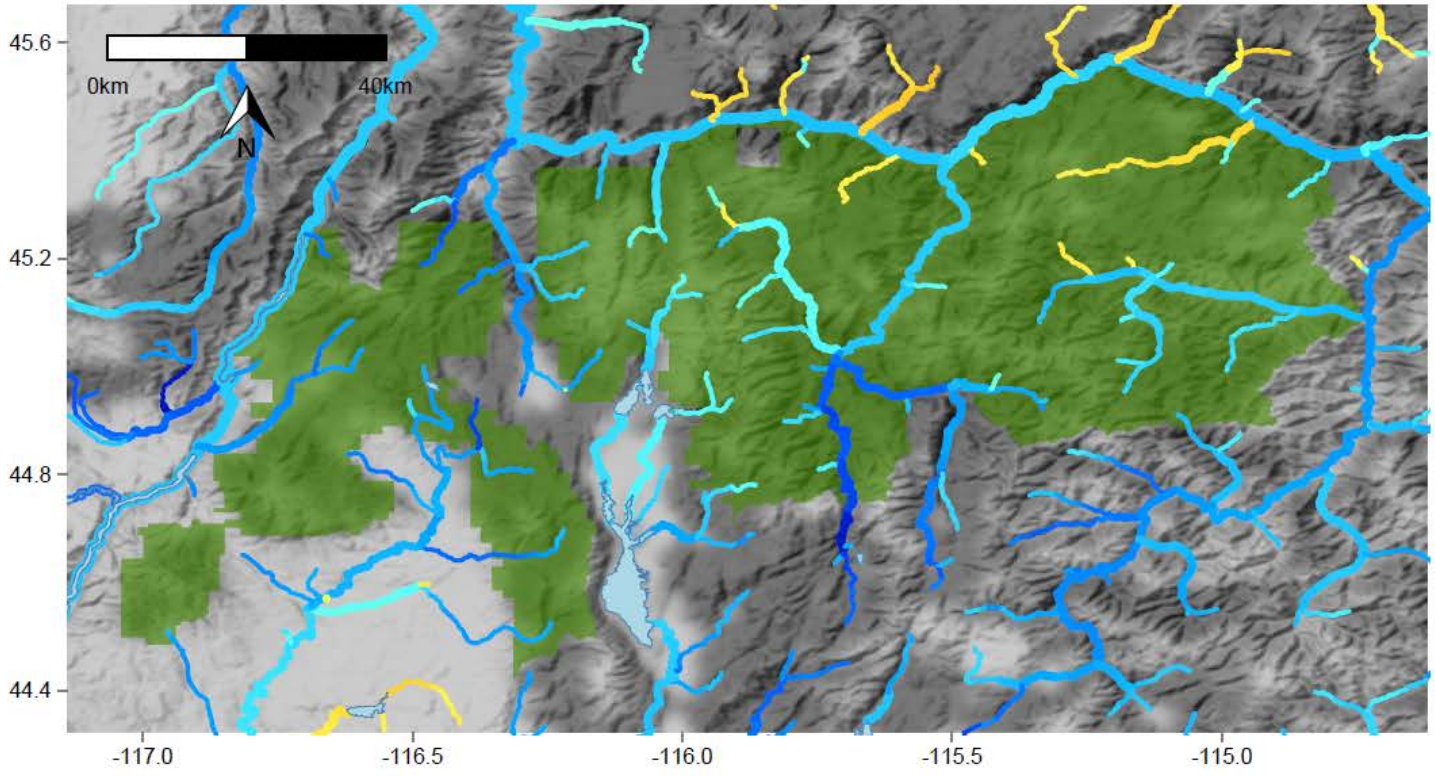
Research & Development

Payette National Forest

Percent Change in 1.5 Year Flood, historical to 2080s A1B



Percent Change 1.5 Year Flood (%)
150
120
90
60
30
0

Historical Mean Annual Flow (cfs)
20 to 100
100 to 2800
2800 to 28400

Waterbody

National Forest

State Boundary

National Forest Climate Change Maps: Your Guide to the Future

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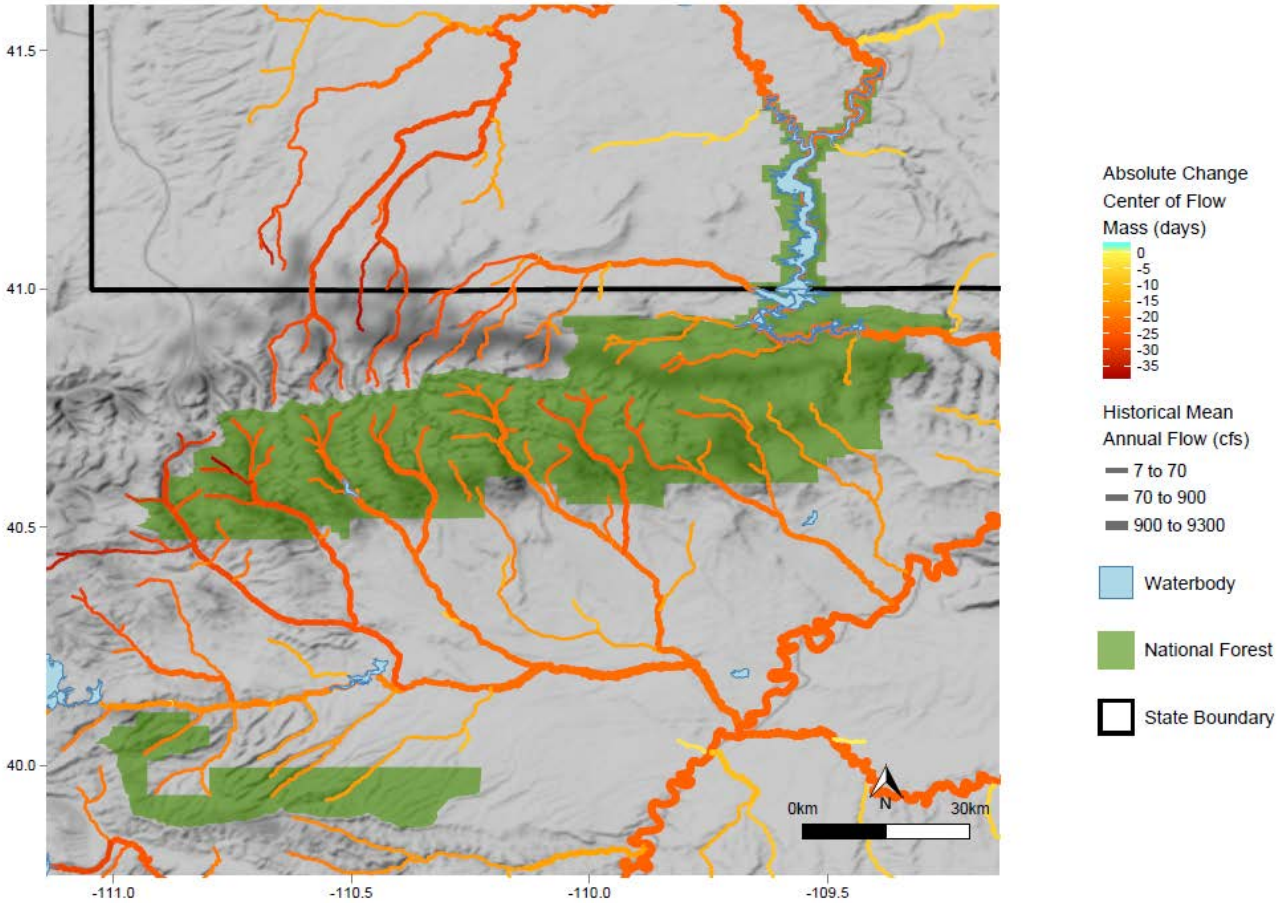
Research & Development

Ashley National Forest

Absolute Change in Center of Flow Mass, historical to 2080s A1B



NATIONAL FOREST CLIMATE CHANGE MAPS:
YOUR GUIDE TO THE FUTURE

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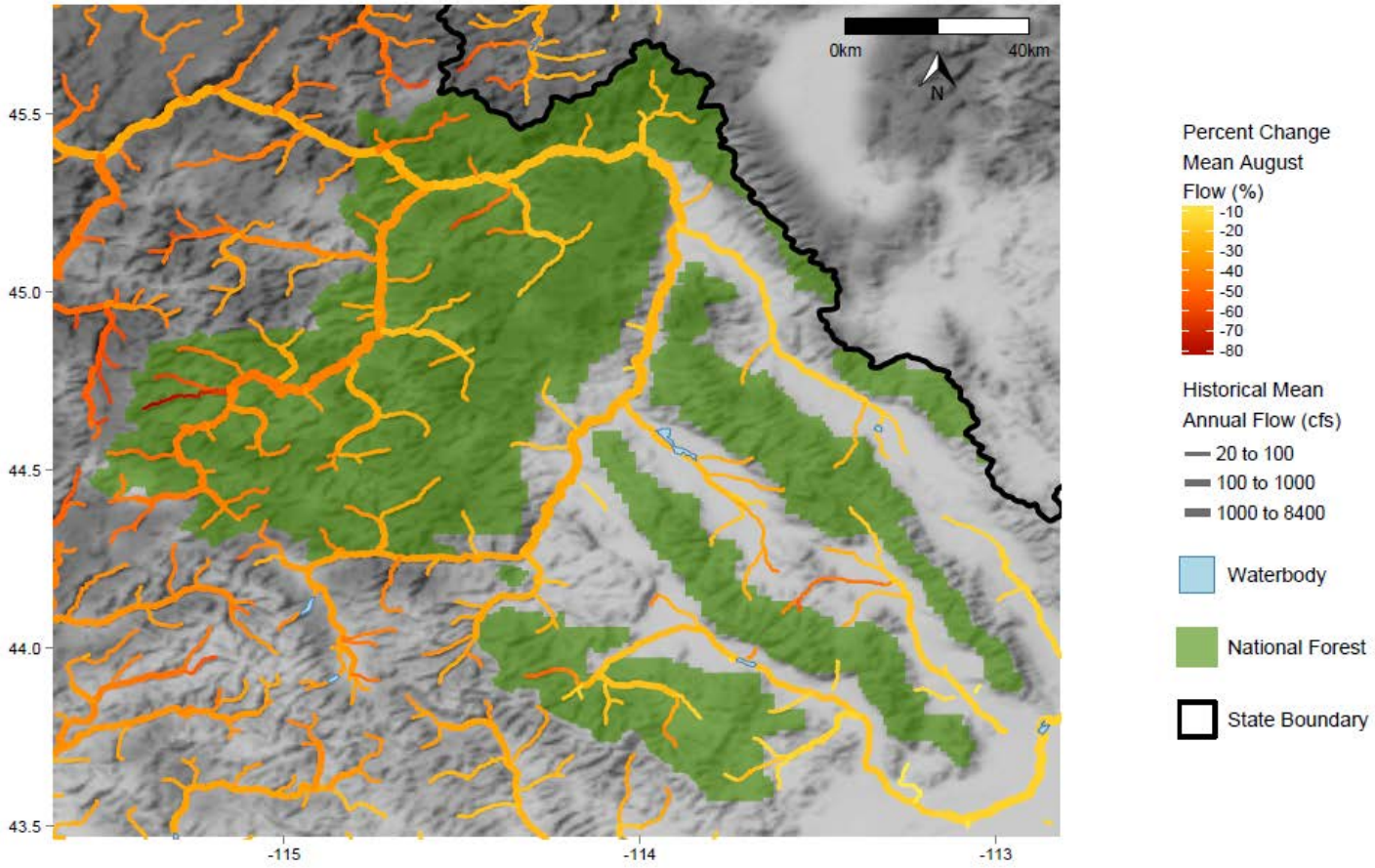
Research & Development

Salmon-Challis National Forest

Percent Change in Mean August Flow, historical to 2080s A1B



Percent Change Mean August Flow (%)
-10
-20
-30
-40
-50
-60
-70
-80

Historical Mean Annual Flow (cfs)
20 to 100
100 to 1000
1000 to 8400

Waterbody

National Forest

State Boundary

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Research & Development

Purposes

- Speed
- Simplicity
- Support of Forest Plan Revision
  - Assessment Phase

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Boise, Idaho
cluce@fs.fed.us

Project Design and Implementation Supported by:
Tiffany Cummins, Natalie Little, & Abigail Lute

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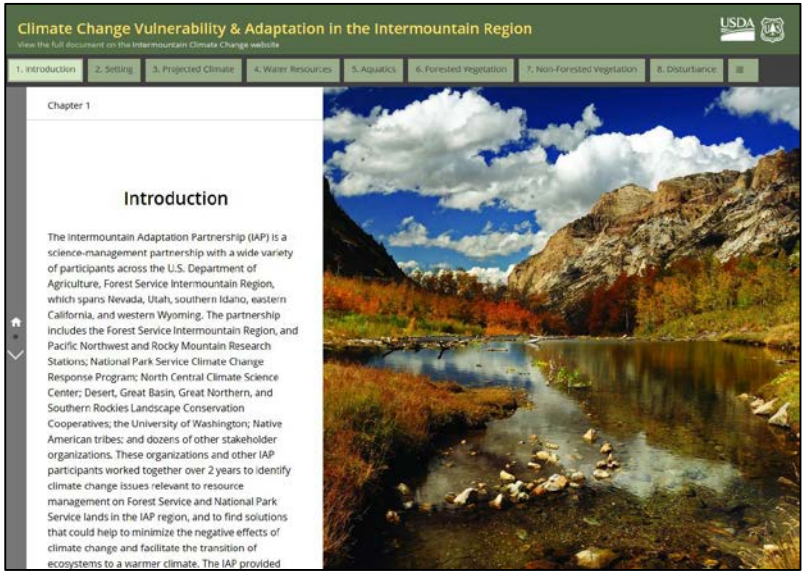
Using Web-based GIS to Provide an Overview of the Climate Assessment

Intermountain Region – Climate Assessment Workshop
May 23, 2018



Natalie Little & Greg McNamee

Intermountain Region– USDA Forest Service

Objectives:

- Reach a broader audience using technology
- Create an appealing interactive story map
- Allow users to interact with information in a new way
- Summarize the info in GTR

Current Status:

- Available to the public at: www.fs.usda.gov/goto/cc
- Initial Version Complete
- Work in progress
  - Add Additional Data Interactions
  - Data Updates

Demo

DIALOGUE AND Q&A

Intermountain Climate Assessment Workshop

May 22-24, 2018

Have a nice evening … see you tomorrow.

United States Department of Agriculture

Intermountain Climate Assessment Workshop

May 22-24, 2018

Dinner at 6pm

Location TBA