



NEWS IN PHOTOS

Chameleon Wishes Environment Would Occasionally Adapt To Him

Yesterday 8:00am •



OCCRI history and function

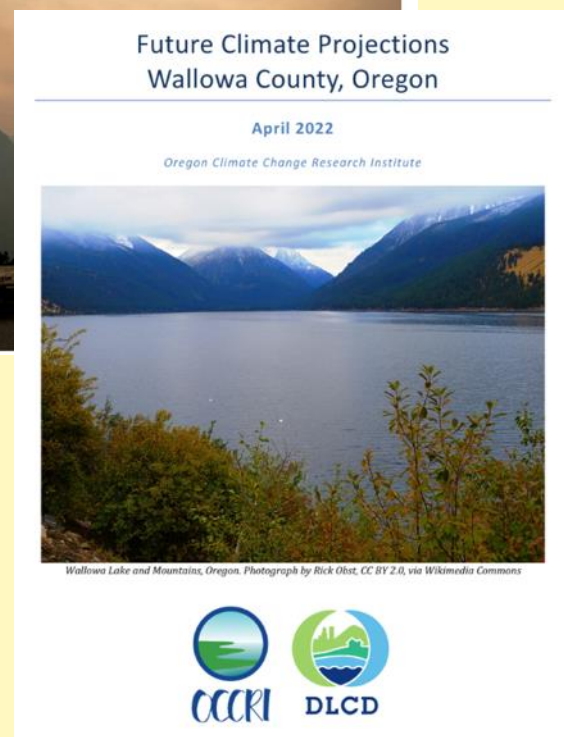
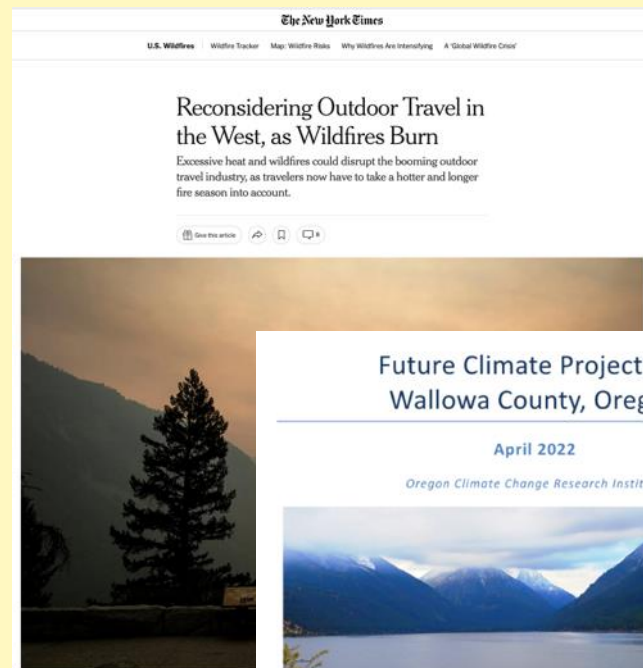


Dudley Chelton

- Established by Oregon House Bill 3543 in 2007
- Facilitate research by public universities on climate change and effects on humans and nature
- Technical support to Oregon Global Warming Commission, agencies

OCCRI history and function

- County-level projections of future climate to inform mitigation of natural hazards
- Provide information to the public in integrated and accessible formats
- Presentations, media interviews, education



Oregon Climate Service



- Research and monitor state and regional climate
- Chair Oregon Drought Monitor Advisory Committee; serve on Water Supply Availability and Climate Extremes Committees and Drought Readiness Council
- Financial consequences of drought declarations

Oregon Climate Assessments

Sixth Oregon Climate Assessment



Erica Fleishman

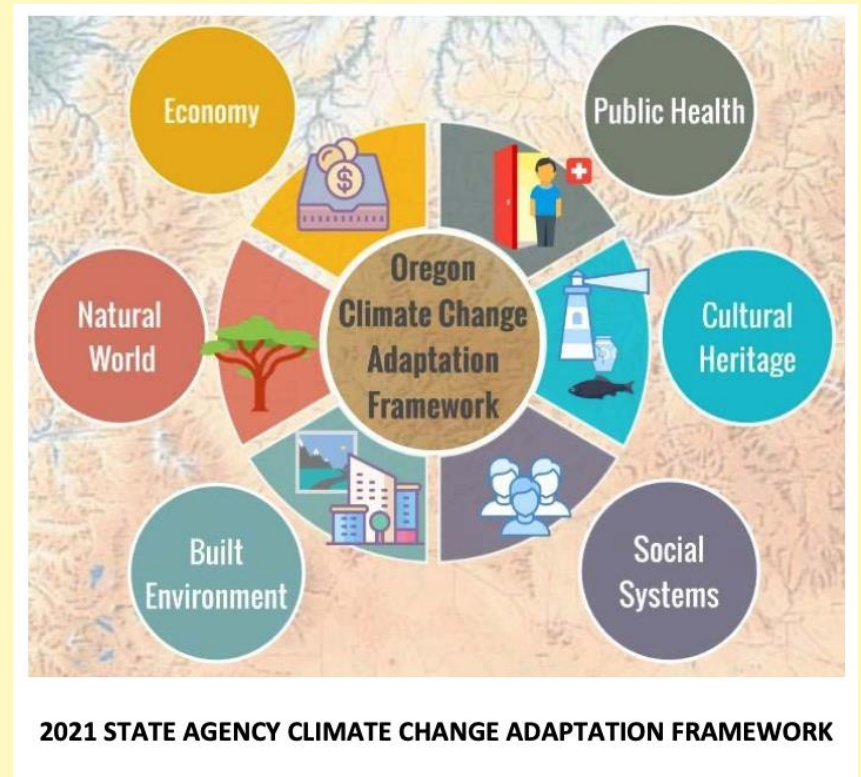
Oregon Climate Change Research Institute



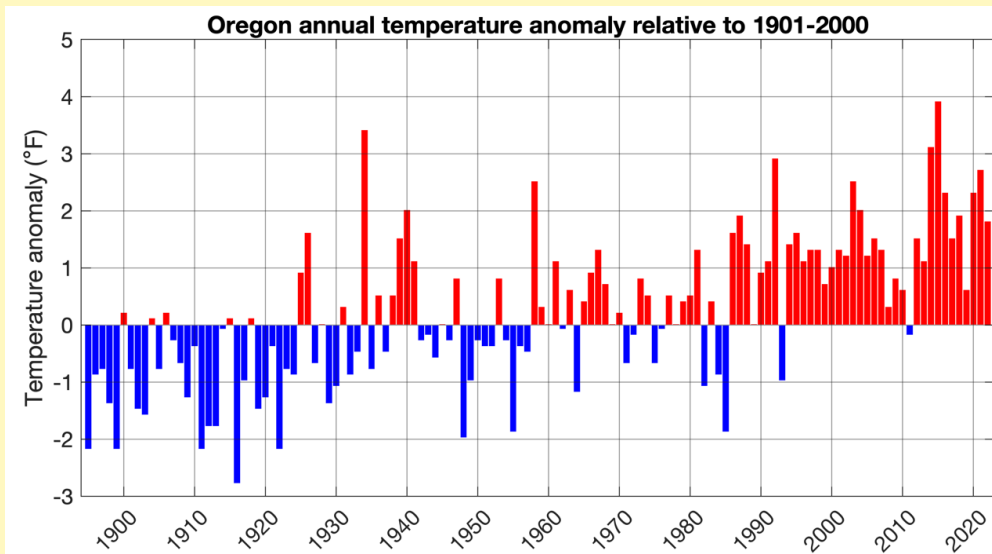
- Biennial
- Peer-reviewed
- State of climate-change science as applicable to Oregon, likely effects of climate change on Oregon
- Inform legislators, decision-makers, media, Oregon residents

Fifth and Sixth Oregon Climate Assessments

- Aligned with Natural Hazards Mitigation Planning, Climate Change Adaptation Framework
- Coordinated, multi-agency response to climate change
- Strengthen interagency coordination; consideration of equity, diversity, and inclusion in program planning and delivery



Structure



Data: NOAA National Centers for Environmental information

- Executive summary
- Introduction
- Natural hazards
 - Extreme temperature
 - Drought
 - Water cycle
 - Wildfire
 - Coastal hazards

Themes related to adaptation strategies

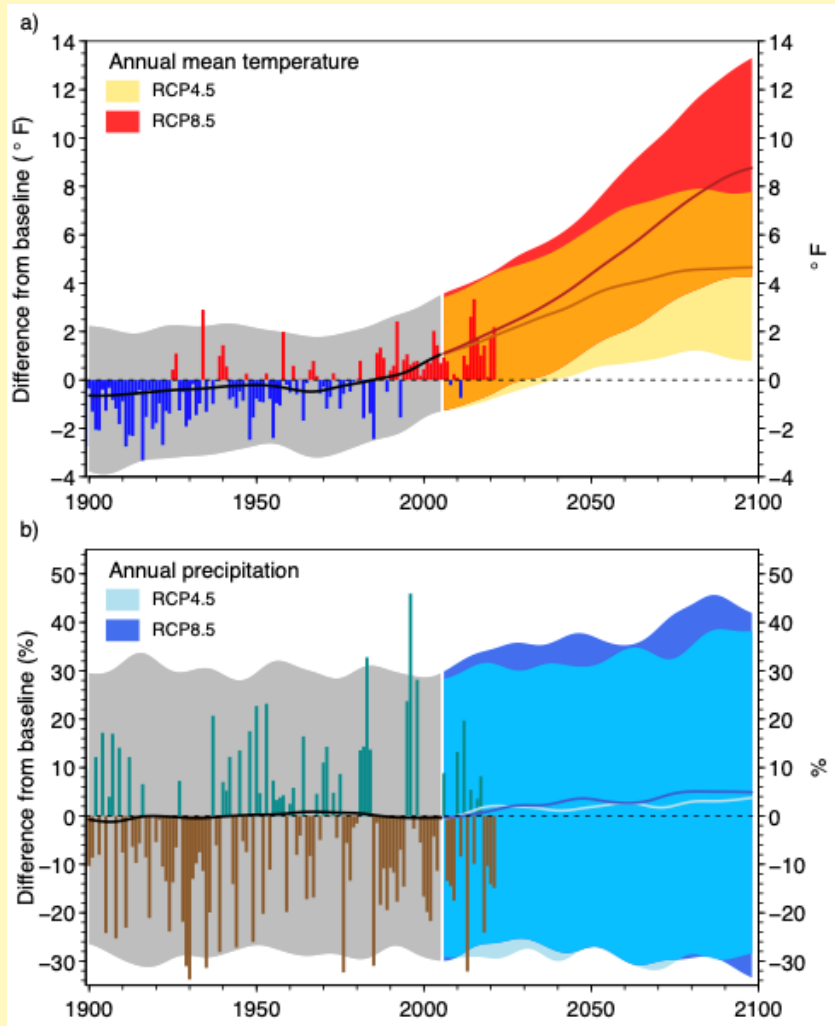
- Economy
- Natural world
- Built environment, infrastructure
- Public health
- Cultural heritage
- Social relationships, systems



What do you want to see in the seventh Oregon Climate Assessment?

What are potential ways to strengthen OGWC and OCCRI collaboration on evaluations and assessments?

Introduction



- Observed and projected trends in temperature, precipitation
- Overview of recent advances in climate science

Arctic amplification

- Evidence for and against contribution of disproportionate Arctic warming to severe weather in the midlatitudes ($30-60^{\circ}\text{N}$)
- Likely effect is small, and greater during summer and wildfire season than winter



US BOEM

Projected changes in wind speeds

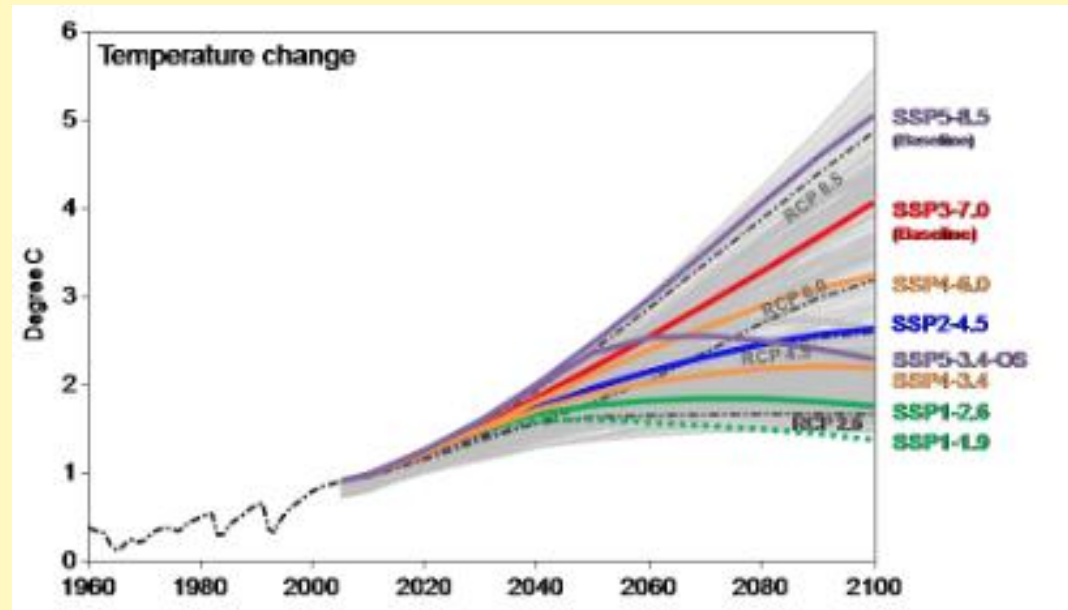


NASA Worldview

- Concerns related to wildfire ignition and spread, electricity grid
- Considerable uncertainty
- Any increases may be greatest during winter storms
- Any decreases may be during summer

Demystifying CMIPs

- Coupled Model Intercomparison Projects
- Differences between CMIP5 and CMIP6
- Availability of recent downscaled models
- Caveats to use

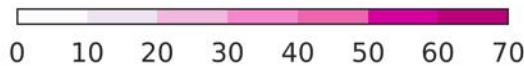
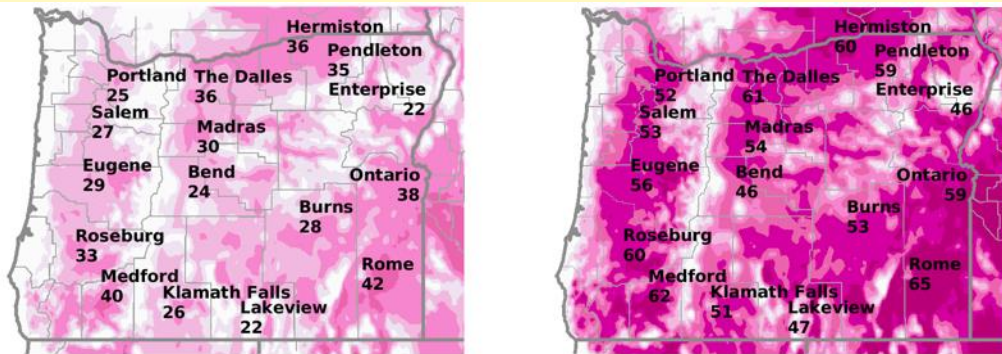


O'Neill et al. 2016

Extreme temperatures

2040–2069

2070–2099



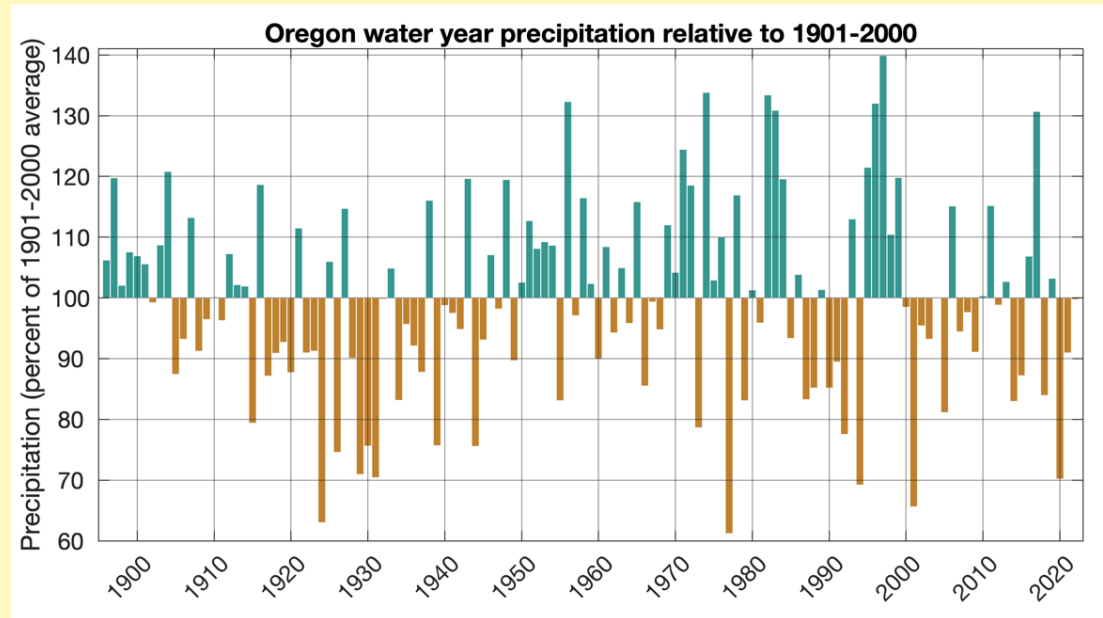
Change in number of days per year relative to 1971-2000

Assumes continued increase in emissions

- Definitions of extreme heat
- Trends in daytime and nighttime temperature
- Public health and workplace safety
- Effects of climate change on temperature extremes
- Attribution of 2021 heat dome

Drought

- Definitions
- Trends in severity and extent
- Effects of climate change on drought



Water cycle and community science



- Glacier change
- PRISM
- CoCoRaHS
- Community Snow Observations
- Mountain Rain or Snow

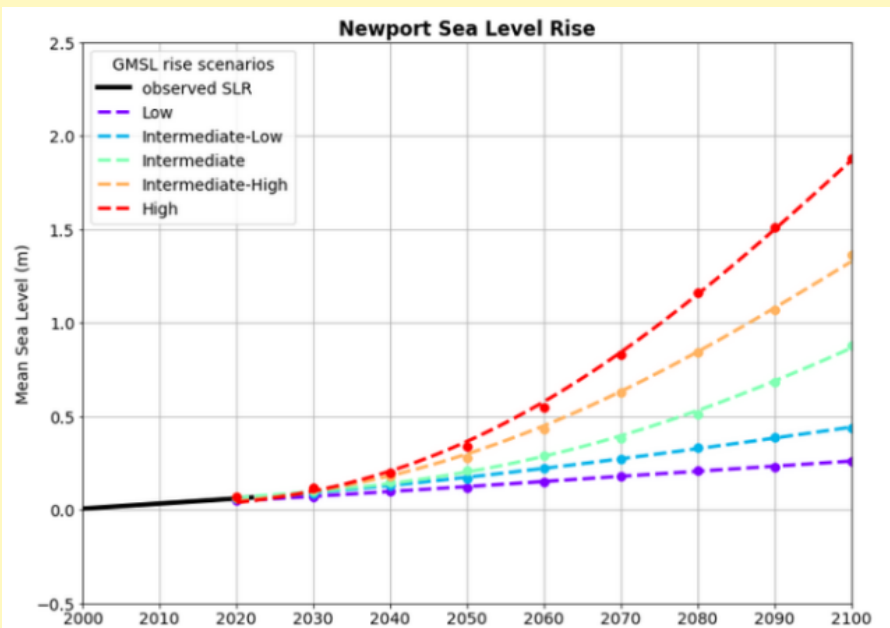
Wildfires

- Trends and drivers
- Trends in lightning-caused wildfires
- Behaviors and policy preferences following 2020 flames
- Concerns, communication needs, and responses to 2020 smoke



Oregon Public Broadcasting

Coastal hazards



- Trends in sea level
- Effects of climate change on coastal erosion and flooding
- Effects of coastal hazards on communities and infrastructure
- Knowledge gaps
- Adaptation efforts

Economics

- Research trends
- Climate change economics and policy tools
- How economic effects of climate change are estimated
- Sector-specific economic impacts in Oregon: agriculture, forests, oceans and coasts, public health, recreation, migration



Image by Jill Wellington from Pixabay.

Natural systems



Dave Shaw

- Effects of 2021 heat dome on forests
- Contribution of warm water to Oregon's cold-water fisheries

Land-use law and climate change

- How land-use law affects adaptation, mitigation
- Effects of statewide land use planning goals
- Transportation and land use emissions reduction targets and performance
- Effects of climate-friendly and equitable communities rules
- Effects of housing and zoning law reforms



Cole Keister

Public health



Associated Press / Gerald Herbert

- Synthesis of research on the composition and toxicity of smoke and its effects on public health
- Compounded occurrence, effects of fine particulate matter and surface ozone
- Stresses of wildfire smoke on the hospital system

Tribal resilience to climate change

- Authors: four early career tribal citizens
- Ceremony
- Political action
- Workforce development
- Environmental stewardship
- Youth education and fellowship



Nez Perce Tribe

Art and climate change

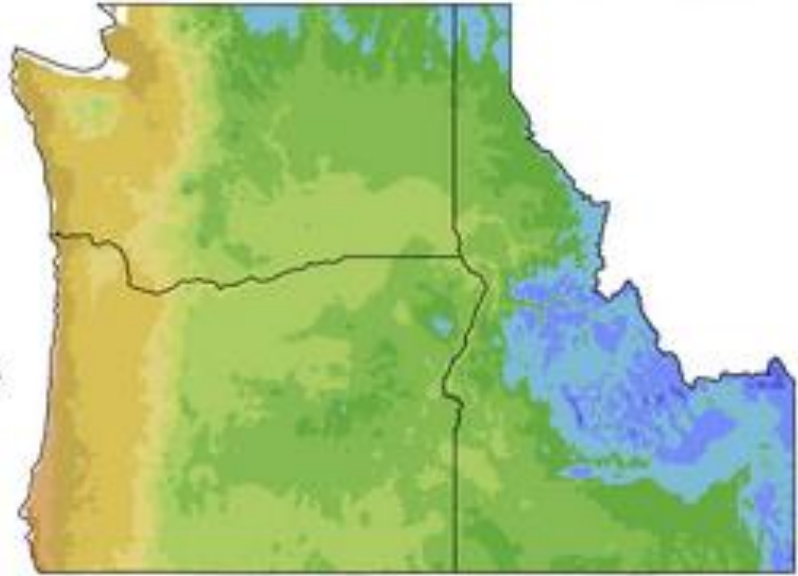
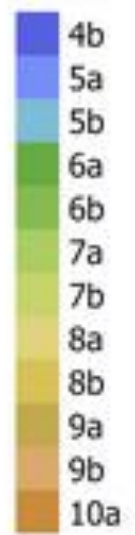


Figure 2. David Griffith's *Two Degrees of Impact* on exhibit in Portland, Oregon, September 2022. Photograph by Dominique Bachelet.

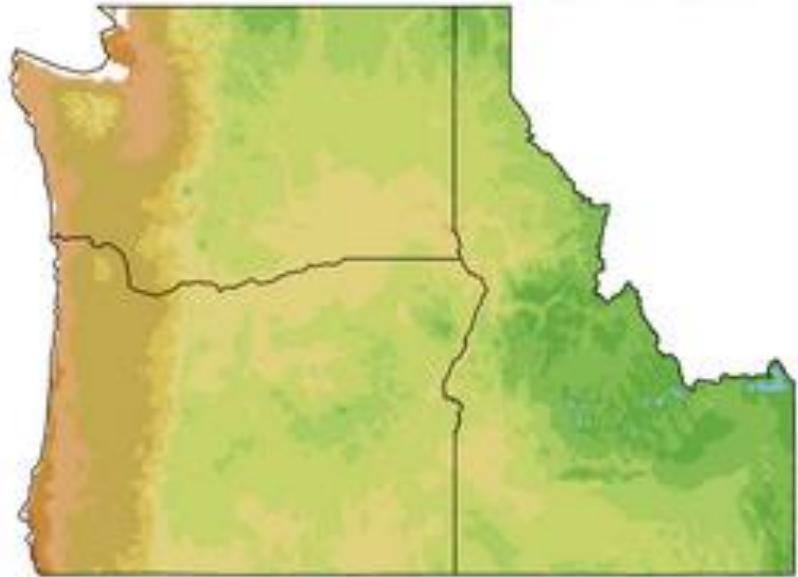
- Inform viewers about climate change
- Engage the audience in conversation, information sharing
- Use of art to encourage cultural evolution and transformation

1971-2000

Plant
Hardiness
Zones



2040-2069



Hardiness zone RCP 8.5 projections:
climatetoolbox.org (Lauren Parker)
Map: Janelle Christensen

What do you want to see in the seventh Oregon Climate Assessment?

What are potential ways to strengthen OGWC and OCCRI collaboration on evaluations and assessments?



Please stay in touch
erica.fleishman@oregonstate.edu