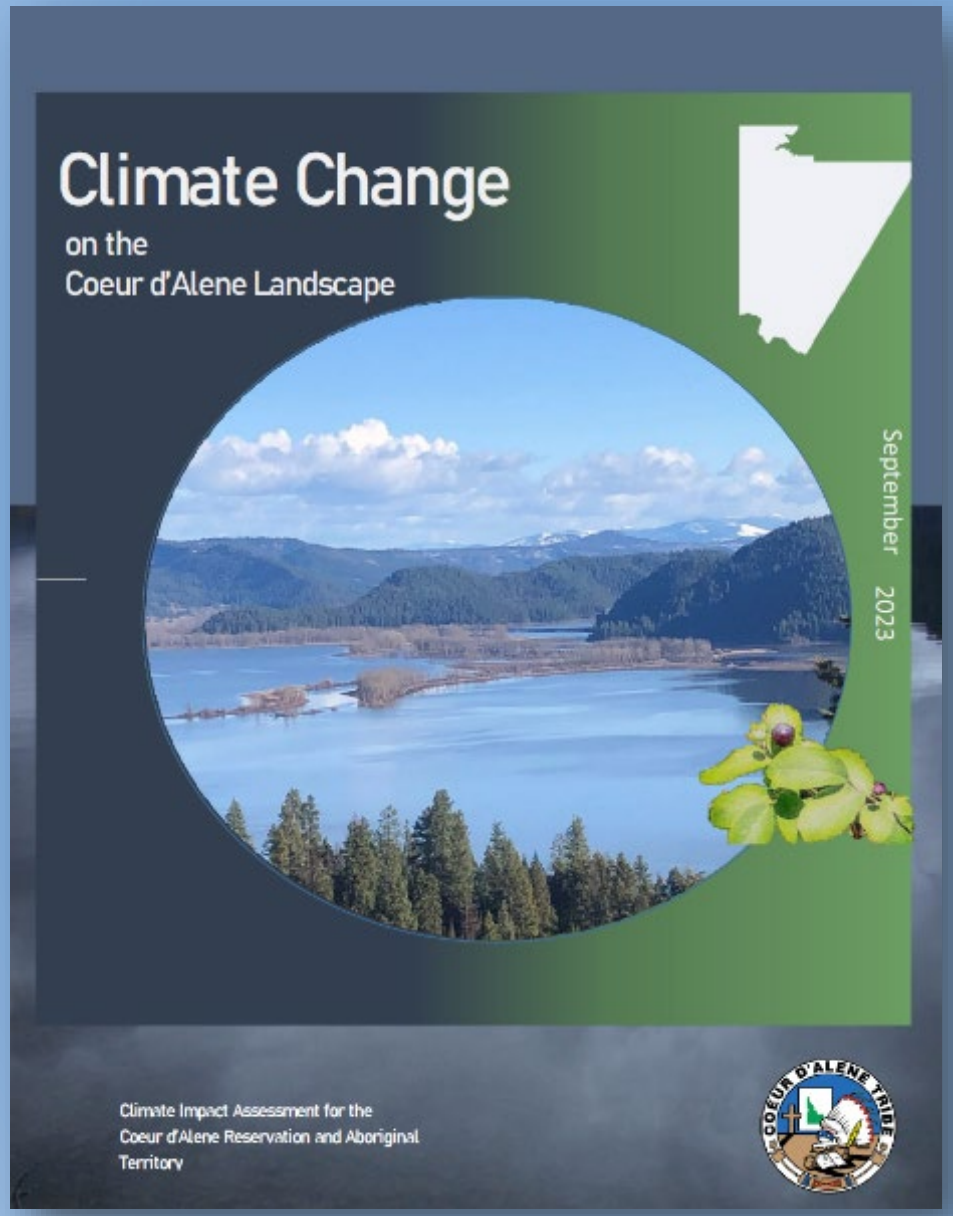
Coeur d'Alene Tribe Climate Assessment and Adaptation Planning



2023 Climate Impact Assessment

- Overview of land use changes
- Schitsu'umsh calendar and phenological changes
- Regional climate impacts
- Economy and workforce
- Energy
- Food and agriculture
- Housing
- Land and Water
- Health and public safety
- Facilities and Infrastructure
- Recommendations


Moons & Seasons
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
sit.sitkw
setqaps
'yalstq
stsa'aqw
schedp
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SETQAPS
'YALSTQ
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SIT.SITKW
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slamp
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sched
smuk'wn
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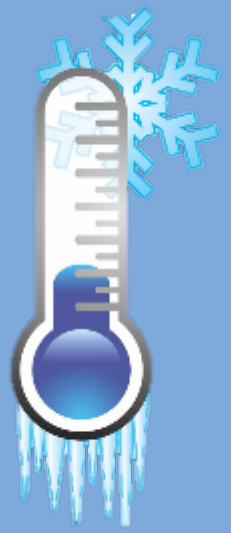
teqwpenkhw
schme'emn

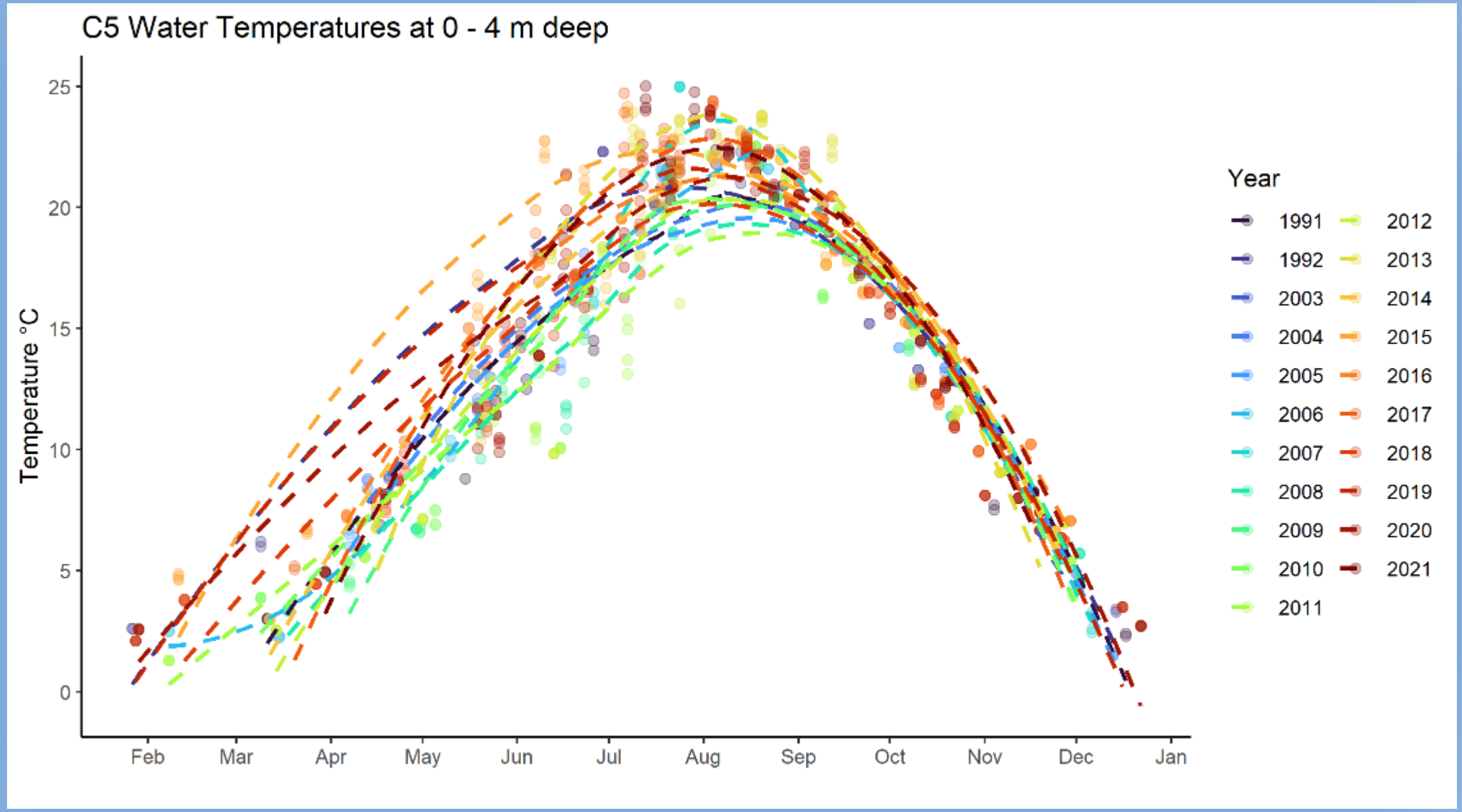
Projected weather and precipitation changes

Idaho average temperatures have risen about 2°F over the last century, and are on track to **rise between 5-15°F** by the end of century.



The number of freeze-free days in the Coeur d'Alene watershed is projected to increase from a **historical average of 196 to between 222-300** by end of century.

May 1st Snow-water equivalents are expected to decrease from an historical average of about **ten inches to less than three inches** by end of century.


C5 Water Temperatures at 0 - 4 m deep
Temperature °C
25
20
15
10
5
0
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Year
1991
1992
2003
2004
2005
2006
2007
2008
2009
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2011
2012
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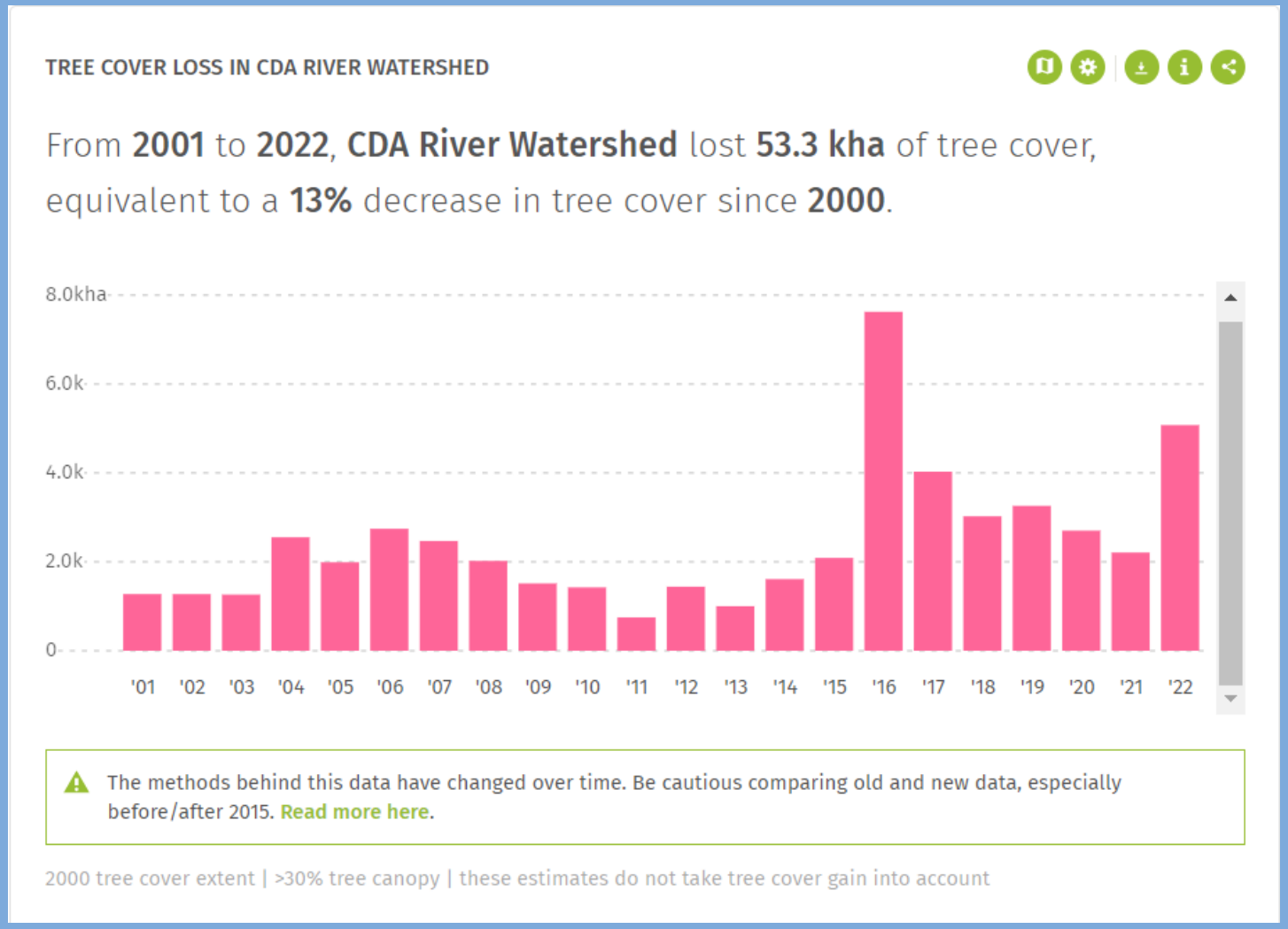
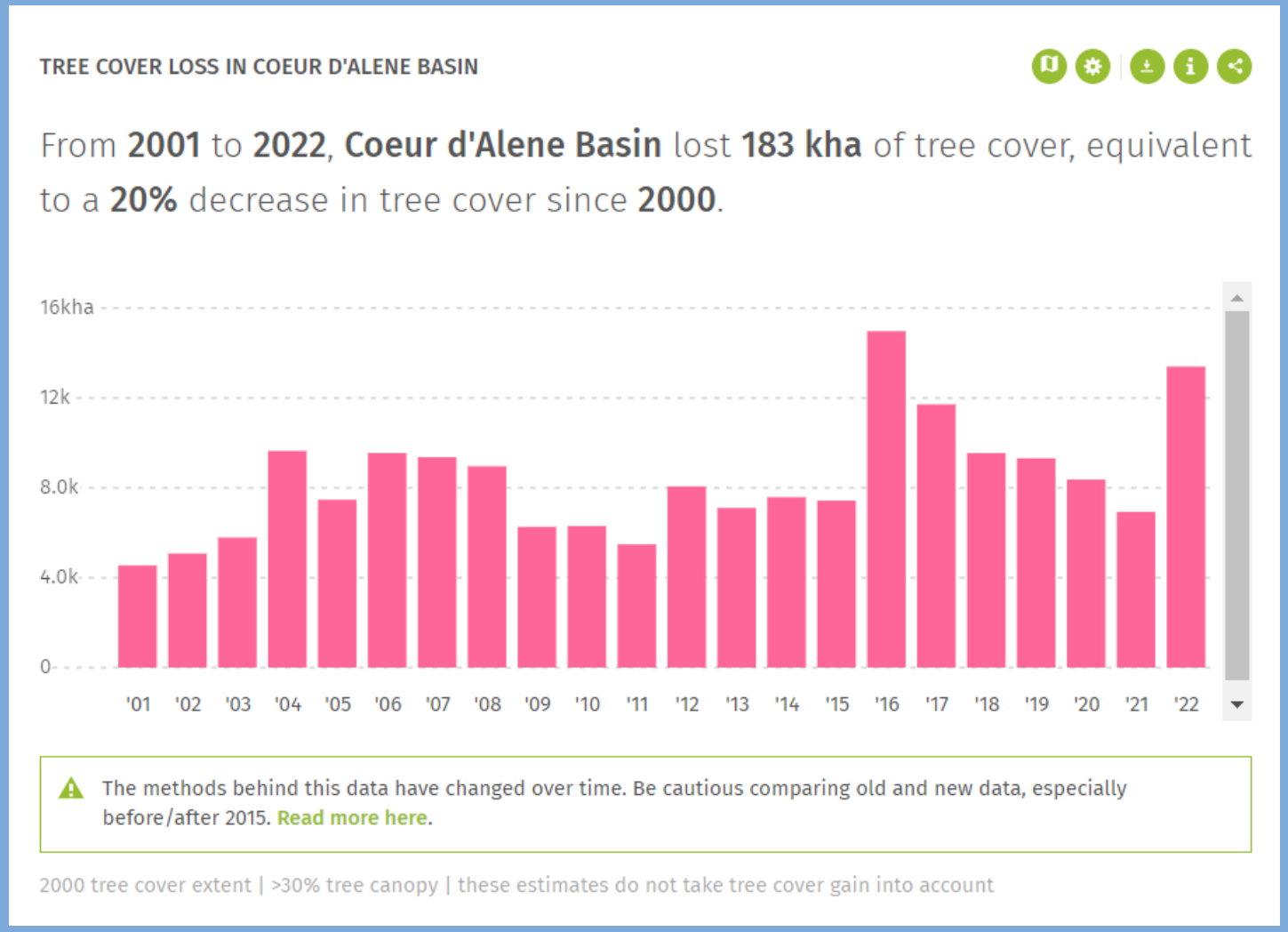
2014
2015
2016
2017
2018
2019
2020
2021

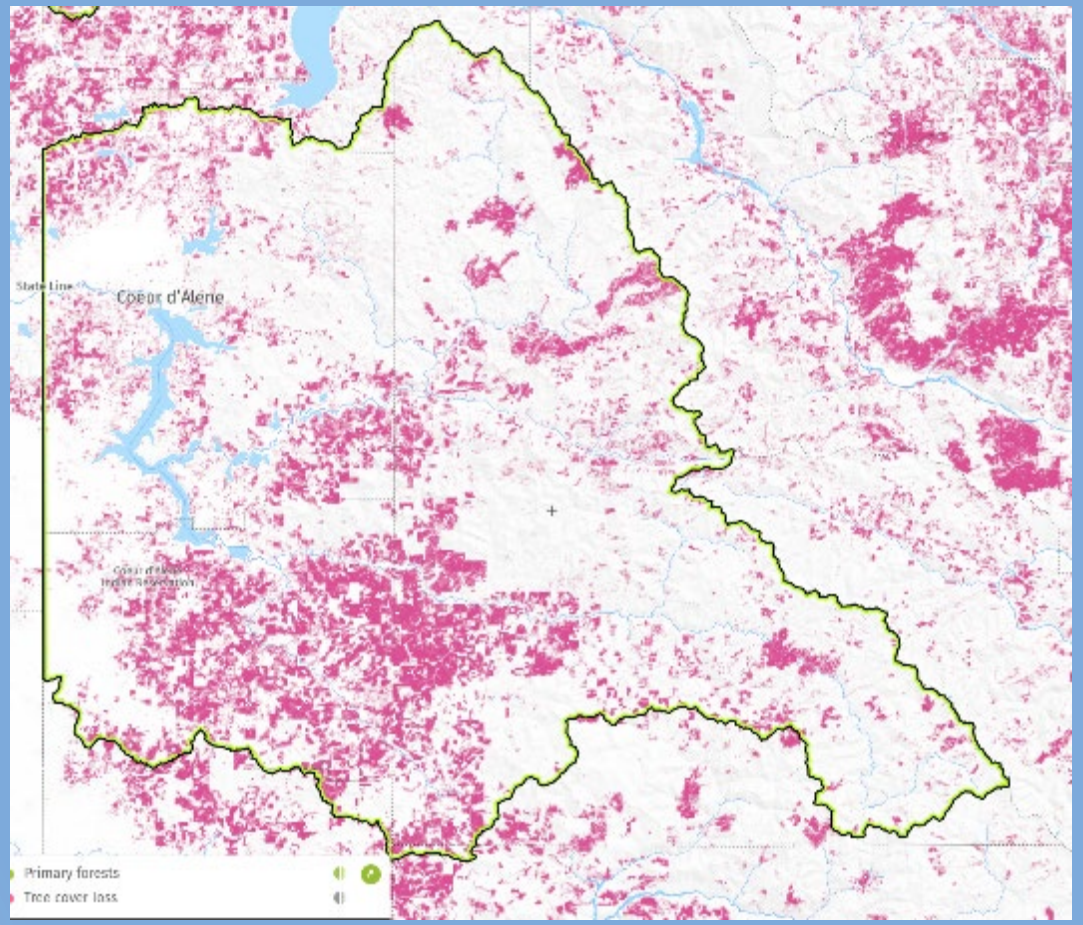
CDA River Watershed Tree Cover Loss



Coeur d'Alene Basin Tree Cover Loss



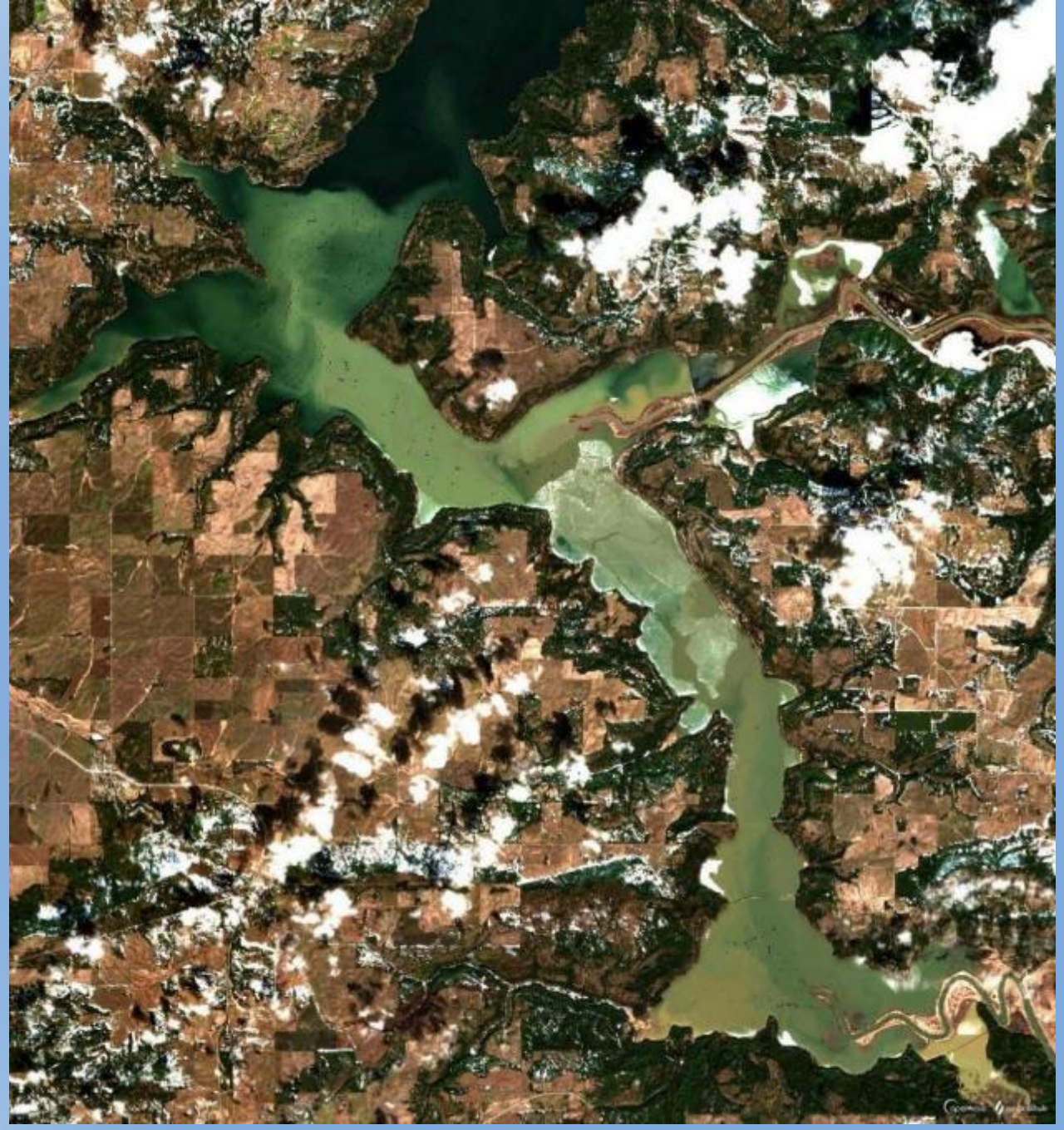
Basin-wide impacts of tree cover loss



- Changes in hydrology
- Changes to soil health and structure
- Loss of biodiversity

October 3, 2020

Sentinel-2 L2A, EO Browser



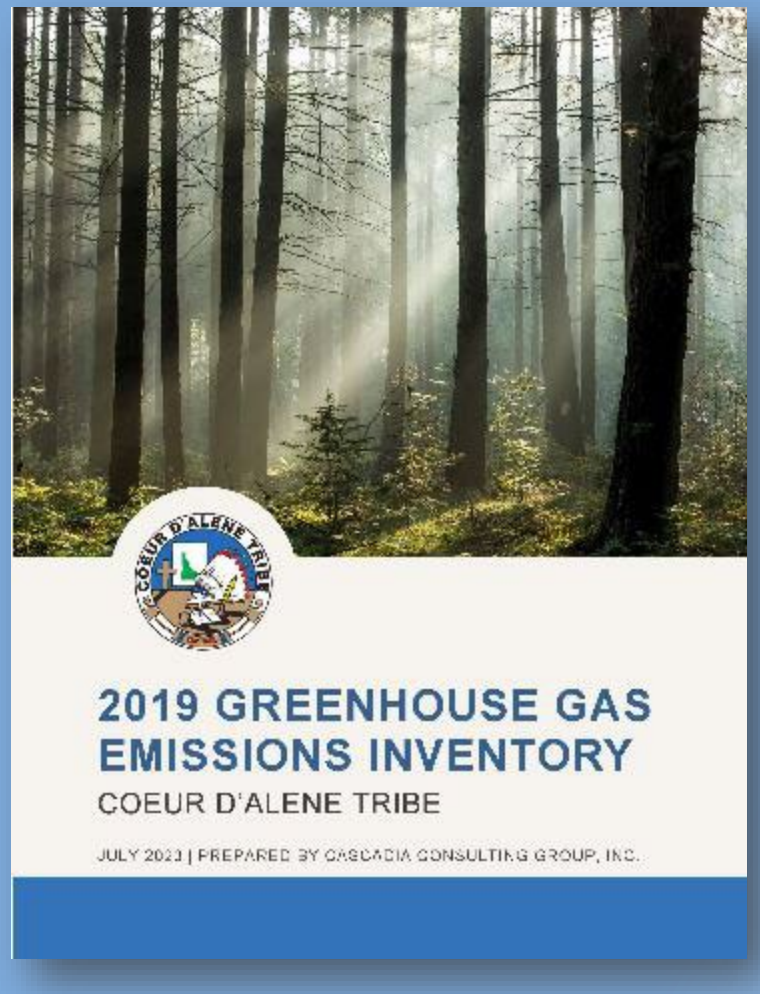
Sentinel-2 L2A, EO Browser

March 5, 2022

- 16,000 CFS flow event in St. Joe and CDA Rivers
- Considered “moderate” flow
- Nutrient contributions persist

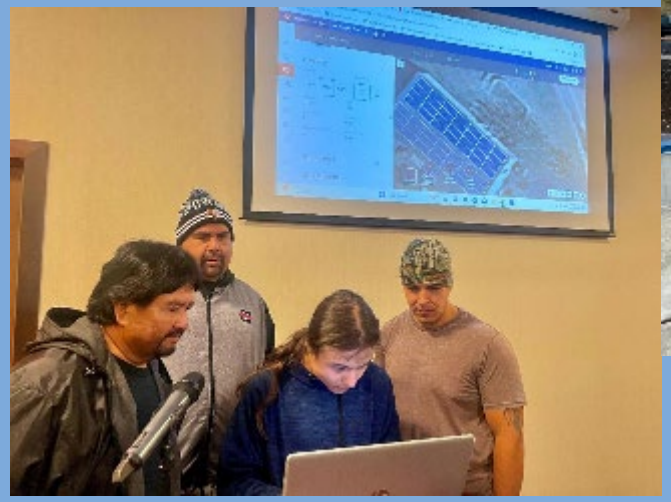
Coeur d'Alene Tribal Actions: Energy and Emissions Reductions

- Climate Pollution Reduction Act
- Solar installations
- Solar for All
- Clean Energy Fellow (pending)
- EV planning
- Energy planning



Solar Installation Training

- 10 trainees
- Preparing for a 36 kw installation on the Coeur Center, with an estimated installation date around March 25th.



Solar for All (pending)

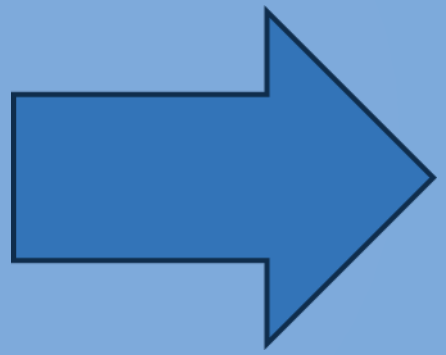
- Application, through Bonneville Environmental Foundation (BEF) as the lead applicant, for solar installation on Tribal homes.
- **Goal:** To decrease the cost of energy, increase energy sovereignty/resilience, and create workforce opportunities within the community.
- Includes battery storage, solar panels, grid alternatives, workforce development, training, steering committee, etc.

Key Climate Impacts

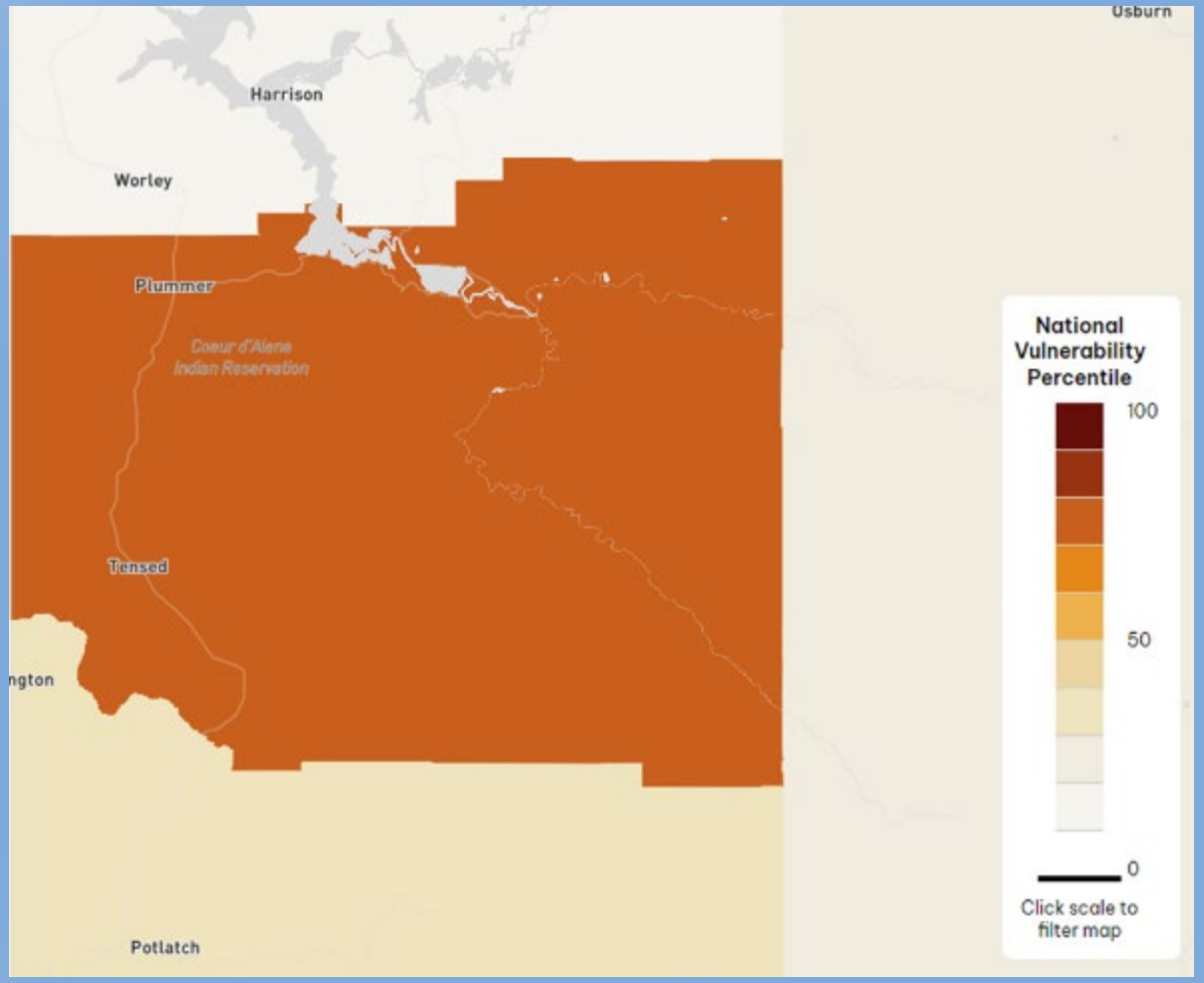
Extreme Heat & Drought

Air Quality

Water Quality

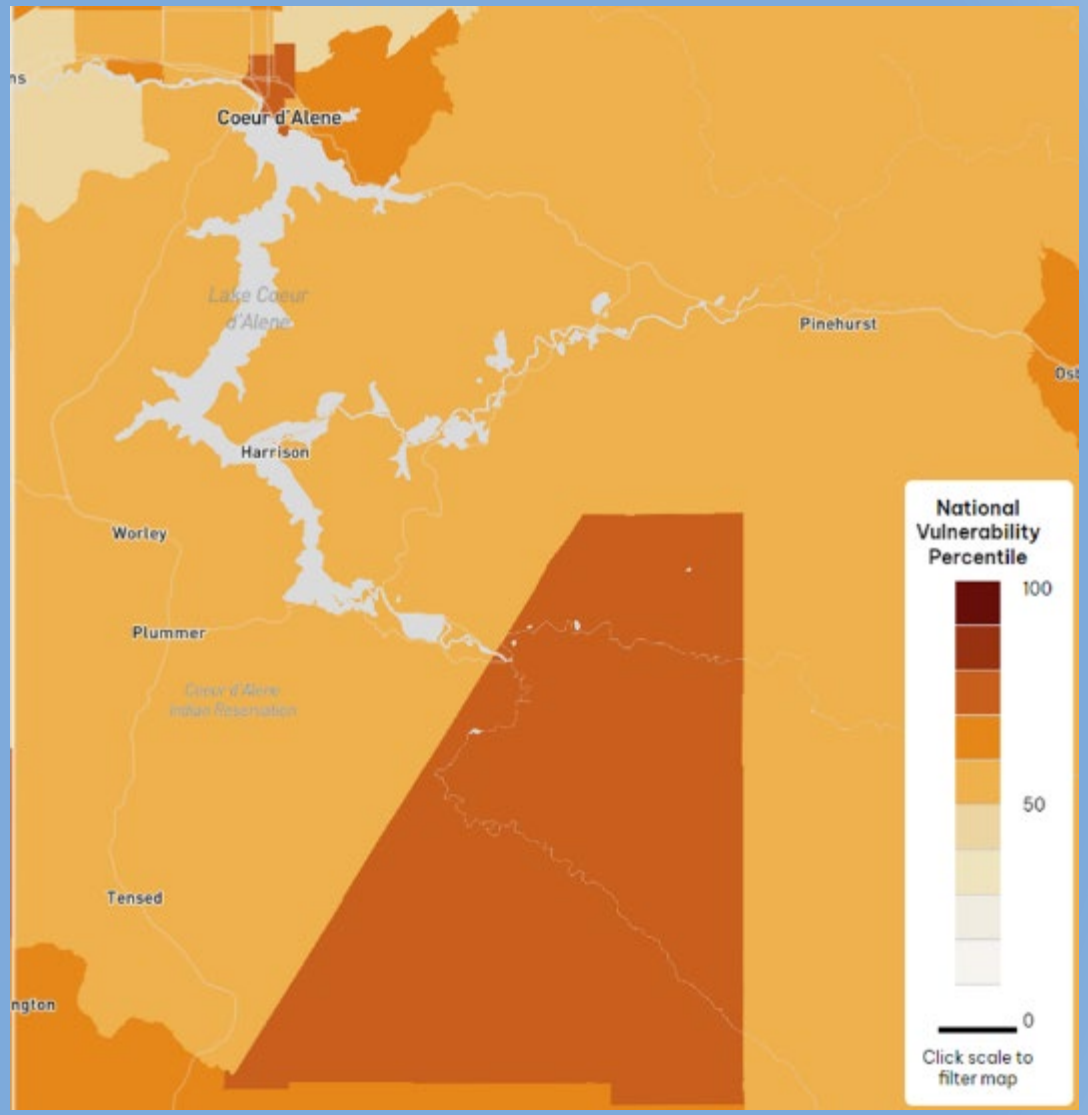


Human &
Environmental Health



73rd vulnerability percentile for air pollution-related deaths

(highest in a 200 mile radius)



59th percentile for air pollution-related illnesses

Air Quality Program

- Monitors the air pollutants that cause climate change, and makes sure that people are abiding by EPA air quality standards on the Reservation (FARR rules.
- Air station in Plummer collects air quality data.
- Adding new air station (southern Reservation) as well as multiple Purple Air Monitors for outdoor PM 2.5 monitoring

Air/Heat partnership with Gonzga Institute for Climate, Water and the Environment

National Institute of Health Subaward Community Engagement and Education Core (pending)

- Host a symposium surrounding a discussion of extreme heat and wildfire smoke impacts in the area by promoting collaboration, risk communication and reduction, and provide health and climate science resources.
- Begin with surveying community perceptions of risk, baseline climate literacy, support for adaptations measures, and identify barriers to intervention implementation/use.

Northwest Climate Resilience Collaborative (UW)

- Construct box fan filters for vulnerable community members
- Community survey work

Climate Pollution Reduction Grant (CPRG):

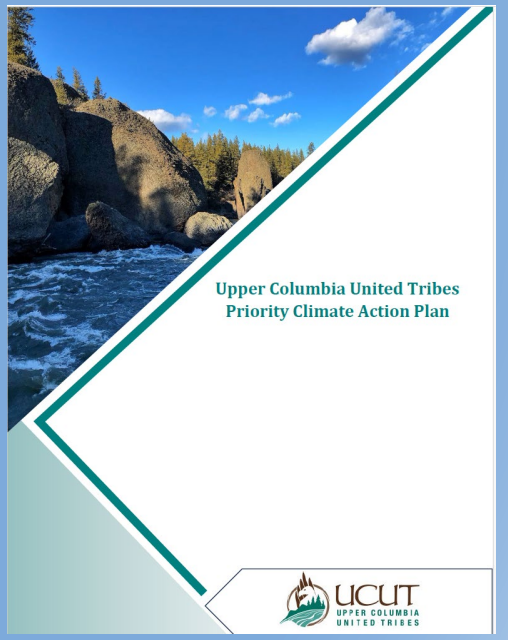
a two-part funding opportunity

Planning:

- Finalized and submitted our Priority Climate Action Plan (PCAP) that incorporates measures to reduce GHG emissions; focus on building energy, transportation, waste reduction and HVAC system installation.
- Created a Community Engagement Plan to further develop the Comprehensive Climate Action Plan (CCAP).

Implementation:

- Based on the Community Engagement and feedback, implement GHG reduction programs, policies, projects, and measures identified in the PCAP.



Environmental and Climate Justice Community Change Grant

"Empower disadvantaged communities and their partners to design, develop, and implement multi-faceted community-driven projects."

- Focusing on each community, create different models/scenarios of ecological and economic growth that incorporates green infrastructure, and promotes the health and wellbeing of the community.
- Green infrastructure: tree canopy, storm water infrastructure, climate resilient building code development, etc.

Discuss, share and learn about Tribal food economies, small business development, climate resilience, and youth engagement in food systems and tradition.

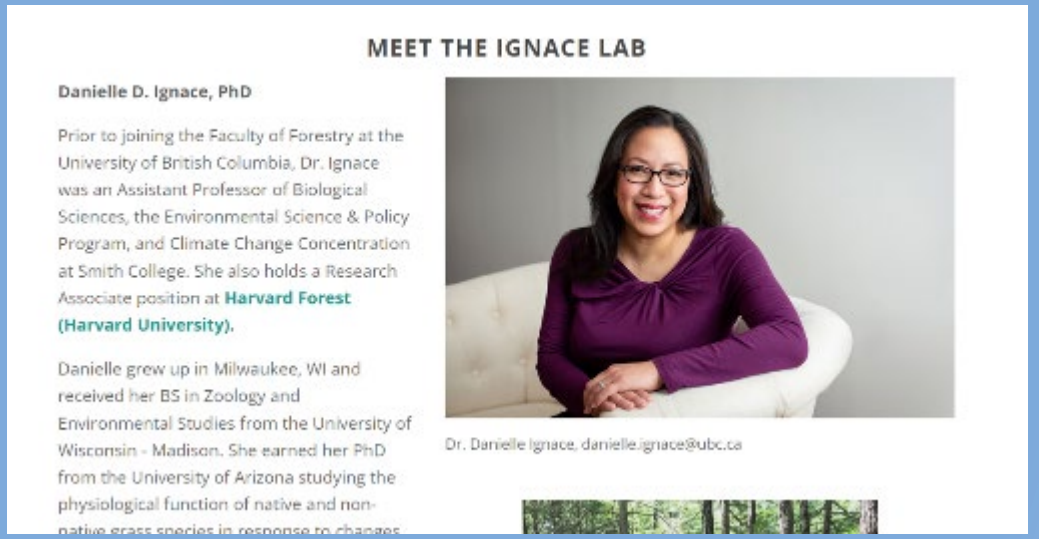
USDA Climate Smart Ag

- State-wide grant to promote climate resilient practices in agriculture
- Coeur d'Alene Tribe has three components:
  - Produce biochar from Fire and Fuels slash and track to determine cost of production, quantity, etc.
  - Apply biochar to 50 acres of test plots and monitor emissions, soil moisture, nutrient cycling, etc.
  - Conduct outreach and enroll farms on reservation in climate-smart practices (via NRCS)

Photo: Oregon Public Broadcasting

Actions: Land and Water

- Biochar
  - USDA
  - USFS partnership to determine biochar potential for addressing invasives and promoting native seed mixes on remedial site (Moon Gulch)
- Forest health – BIA proposal (pending)
  - Survey soil health to monitor soil moisture, temperature, C:N content, soil layer development
  - Continuously measure soil moisture and temperature to assess drought risk
  - Determine tools for early detection of pests, pathogens and invasives; identify and quantify diversity of microorganisms impacting soil nutrient cycling



MEET THE IGNACE LAB

Danielle D. Ignace, PhD

Prior to joining the Faculty of Forestry at the University of British Columbia, Dr. Ignace was an Assistant Professor of Biological Sciences, the Environmental Science & Policy Program, and Climate Change Concentration at Smith College. She also holds a Research Associate position at **Harvard Forest (Harvard University).**

Danielle grew up in Milwaukee, WI and received her BS in Zoology and Environmental Studies from the University of Wisconsin - Madison. She earned her PhD from the University of Arizona studying the physiological function of native and non-

AmeriCorps: April 25 – June 17

- Engage in comprehensive community service initiative within the community to address immediate environmental and community needs.
- Schedule:
  - Community Cleanup
  - Hangman Creek riparian restoration
  - Community Garden rehabilitation and greenhouse repair
  - Enhancement of historic camas fields
  - Box fan filter building for air quality preparedness
  - Tree canopy mapping and tree inventory in Desmet and Plummer

Call to Action

- What steps are we taking to protect remedial actions: Are we:
  - Coordinating with fire management agencies?
  - Looking for strategies to improve drought resilience and conserve water?
  - Planning for increased precipitation?
  - Is our risk information up to date?
- Are we adequately addressing land use changes across the Basin?
- How are we tracking, mitigating, clean-up actions?

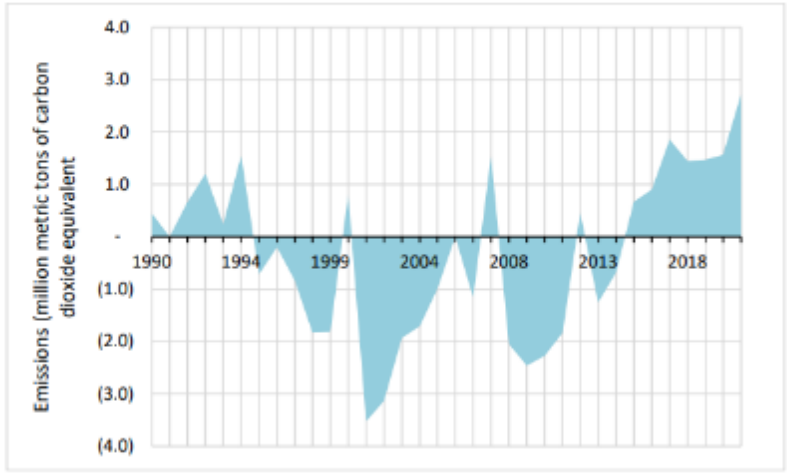


Figure 2. Idaho greenhouse gas emissions for land use, land use change, and forestry, 1990–2021.

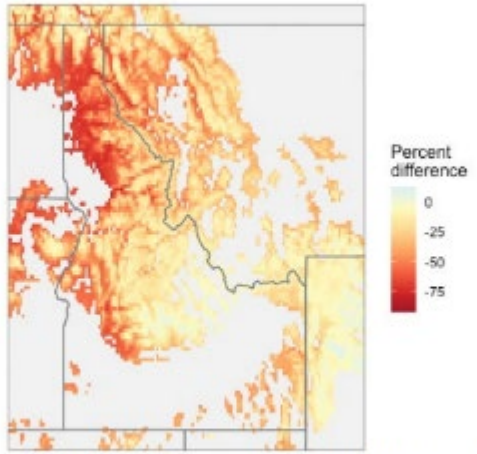


Figure 8. Percent difference in annual maximum snow water equivalent (SWE) from the historic (1970-1999) to future (RCP8.5, 2050-2079) case. Data source: Hydrologic simulations from the VIC model forced by downscaled climate projections from 10 different climate models – MACAv2-Livneh.

Abatzoglou, J. T., Marshall, A. M., Harley, G. L. 2021. Observed and Projected Changes in Idaho's Climate. Idaho Climate-Economy Impacts Assessment. James A. & Louise McClure Center for Public Policy Research, University of Idaho. Boise, ID.

Questions?

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