NLC Climate Change Work Group
Module 02: Climate Change Science Workshop

January 16, 2025

NLC Climate Change Work Group

Workgroup
- History
- Mission

Resource Modules
- Module 1 - Coordinator Role
- Module 2 - Science
- Module 3 - Adaptation
- Module 4 - Advocacy
- Module 5 - Education

Next Steps
- Conduct training
- Continue recruiting coordinators

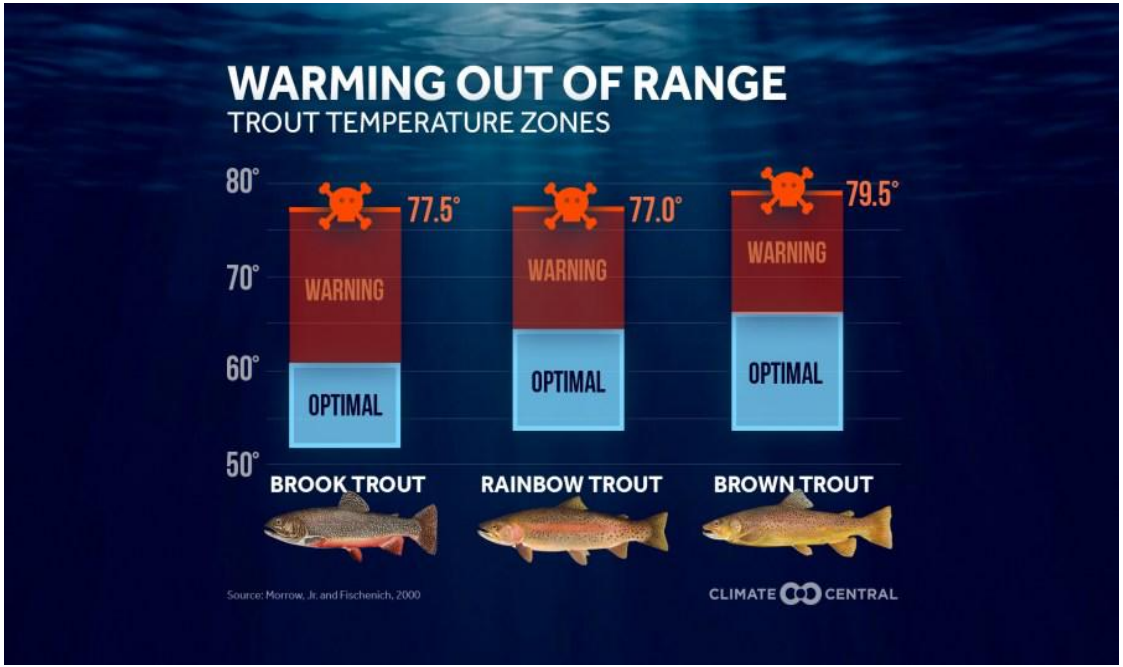

Ed Northern, Mackay Reservoir Idaho

Climate Change Work Group History

Founded in 2013

to raise awareness

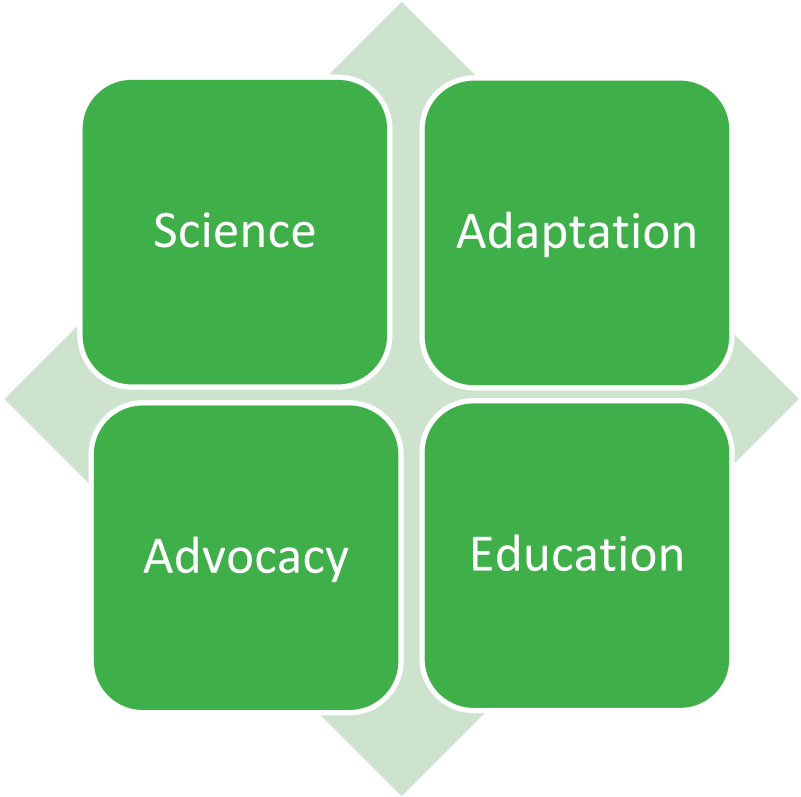
of climate change.



Climate Change Work Group Mission

Empower TU members to become **effective champions** for TU climate change policy and initiatives, in their communities, regionally and nationally, through science-based education, communication, and advocacy.

CCWG Resource Modules



CCWG Module Resources

- Tools
- Tips
- Facts
- References
- Links
- Contacts

Note that third party perspectives and opinions presented in the resources and examples may not be endorsed by TU.

Climate Change Coordinator Training - Trout Unlimited

Home > Get Involved > Volunteer Tackleboxe > Council Leader Resources > National Leadership Council > NLC Conservation Workgroups > Climate Change Workgroup > Clim

Climate Change Coordinator Training Manual

Climate Change Coordinator Training - Trout Unlimited

Contents

CCWG Module Resources

Our most effective messaging is peer-to-peer!

CCWG Bit-sized Pieces

Use the CCWG Module Resource to:

- **Request a regular timeslot** (5–10 minutes) on Climate Change at your monthly chapter business meeting or quarterly council meeting.
- **Prepare a short, impactful presentation** for each opportunity using content provided by the CCWG module or your own research efforts.
- **Establish a dedicated section** of your chapter/council website and other social media where you provide dependably fresh messaging and links.
- **Regularly update** your chapter and council social media with Climate Change information.

CCWG Bit-sized Pieces

Take the lead on climate change adaptation projects in your area.

- **Concentrate on TU efforts** to reduce the effects of climate change to assure you are an effective spokesperson for TU.
- **Coordinate with your Conservation chair** and other NLC Workgroup representatives on their key initiatives.
- **Leverage additional outside resources** that reinforce or amplify the TU mission and messaging by partner with a local agency to cosponsor a program of climate change activities.
- **Invite a representative** to present at a monthly meeting and advertise it in your newsletter and on social media.

CCWG Bit-sized Pieces

Reach out.

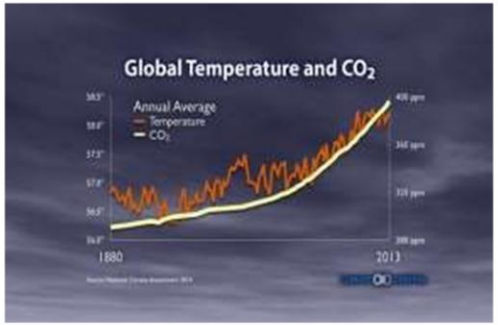
- Encourage chapter/council members to **join organizations** sharing TU's goal of reducing emissions.
- Encourage your chapter/council members to **ask their members of Congress** to support legislation that will lower emissions.

Module 02: Science

What causes this warming trend?

- Increased levels of Greenhouse Gases* are correlated with temperature increases

*CO2, CH4, NOx and ozone



Purpose of Climate Change Module 02

This module is intended to help Climate Change Coordinators communicate a consistent TU **science-based message**; one that can and should be in your own voice and come from your observations and experiences.

- I'm a mom. I care about my daughters' future.
- I love nature and feel an ethical need to conserve it.
- I spend a ton of time outdoors and my experience is impacted frequently.
- I am not religious – but you may be, and that might be helpful.
- And yes, I'm a scientist, and the science of CC is clear.

RESOURCE 01: TU's Policy on Climate Change

RESOURCE 02: TU FAQS

RESOURCE 01

TU Climate Change

Table of contents

- Introduction
- What's Happening
- Risks & Impacts to Trout
- Climate Science & Adaptation Work
- Policy Positions
- Take Action

RESOURCE 01

TU Climate Change

A fundamental shift

We need to ***reduce greenhouse gas emissions*** from existing energy production and make a fundamental shift toward renewable technologies.

At the same time, we should ***address the effects of climate change*** facing us today, and that requires federal and state funding that matches the scope of the problem.

Climate change adaptation protects people and communities from flood, wildfire, and drought while making trout and salmon fisheries more resilient. It also provides high-paying jobs in rural communities across America.

RESOURCE 01

TU Climate Change Policies

1. **Conserve land and water** to increase the natural storage of carbon.
2. **Mitigate the effects** of a hotter, drier, more turbulent climate.
3. **Reduce the U.S. carbon footprint**, including greenhouse gas emissions, and encourage renewable energy.

RESOURCE 02: TU FAQS

How do scientists monitor climate change and what evidence is there that it is changing?

Air temperatures around the globe are monitored by NASA's Goddard Institute for Space Studies, NOAA and others. Global temperatures have increased steadily since the beginning of the industrial revolution. The longest continually running data set is maintained by NASA and dates back to 1880 as shown below. According to NASA data, which is consistent with NOAA and other records, 16 of the 17 warmest years in the 136-year record have occurred since 2001.

RESOURCE 02: TU FAQS

Do 97% of scientists really believe that climate changes is human caused?

A 2009 Earth and Space Science News study showed 97.5% of climate scientists actively studying climate change believe that it is human caused. Slightly less than 90% of climatologists not currently active in climate change research believe that humans are causing climate change. A 2021 Cornell study showed 99.9% of peer reviewed scientific papers agree climate change is primarily human caused.

RESOURCE 03: Climate Change & Trout:
Impacts, Opinions & Ways you can help - PowerPoint

RESOURCE 04: TU Podcast:
What Climate Changes Means for Trout and Salmon

RESOURCE 05: Trout and Climate Change - PowerPoint

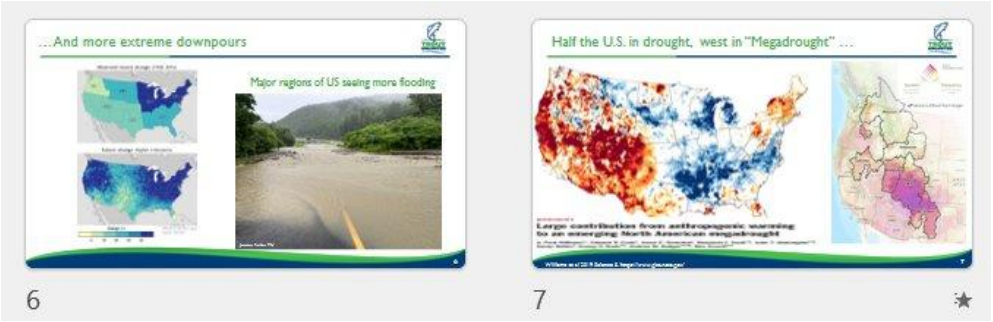
You can draw upon and adapt the CCWG resources to your own situation and outlets such as newsletters, websites and social media, in person presentations, articles, and more ...

RESOURCE 03: Climate Change & Trout: Impacts & Opinions

Helen Neville, TU senior scientist

Impacts of climate change:

a broad overview

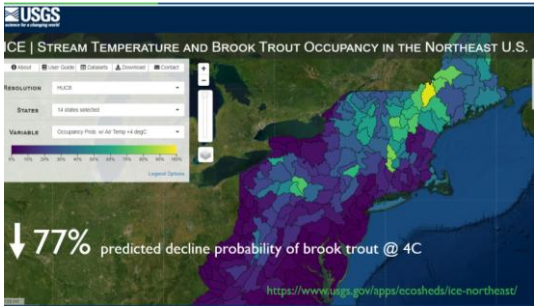


What scientists, the general public and TU members think.

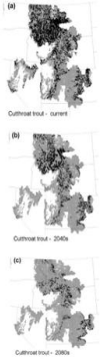
RESOURCE 03: Climate Change & Trout

Impacts on fisheries

Trout declines anticipated east and west



50% decline in cutthroat trout habitat by 2080s



RESOURCE 03: Climate Change & Trout: What TU is Doing and How You Can Help

- TU helps with the 3 primary strategies for dealing with climate change (adaptation, sequestration, and mitigation).
- TU helps and can help more by pairing science with actions.
- You can take opportunities to reduce legacy impacts for fish and habitat and advocate for smart policy.

PRIMARY RESEARCH ARTICLE

WILEY Global Change Biology

Carbon sequestration in riparian forests: A global synthesis and meta-analysis

Kristen E. Dybala[1] | Virginia Matzek[2] | Thomas Gardali[1] | Nathaniel E. Seavy[1]

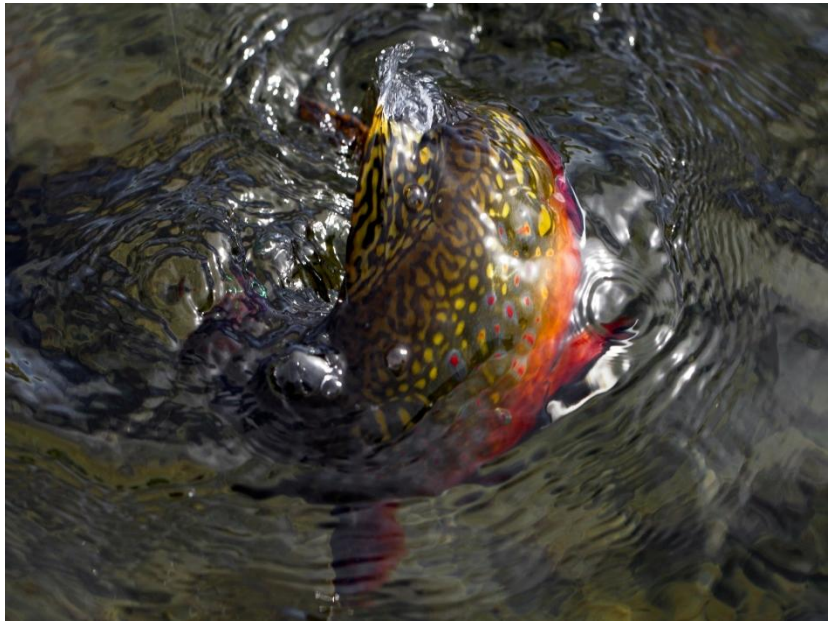
RESOURCE 04: TU Podcast: What Climate Changes Means for Trout and Salmon

TU senior scientist Helen Neville and Western Water Policy Advisor Sara Porterfield explain what's happening and what TU is doing about it.

RESOURCE 05: Trout and Climate Change

- **To define** climate change and its effect on trout.
- **To present** relevant graphs and data which illustrate the indicators of climate change.
- **To encourage** members and chapters towards efforts to increase stream resiliency to climate change.

By Larry Harris



Module 02: Science

RESOURCE 06: En-ROADS – A Global Climate Simulator

RESOURCE 07: Science & Information for a Climate-smart Nation

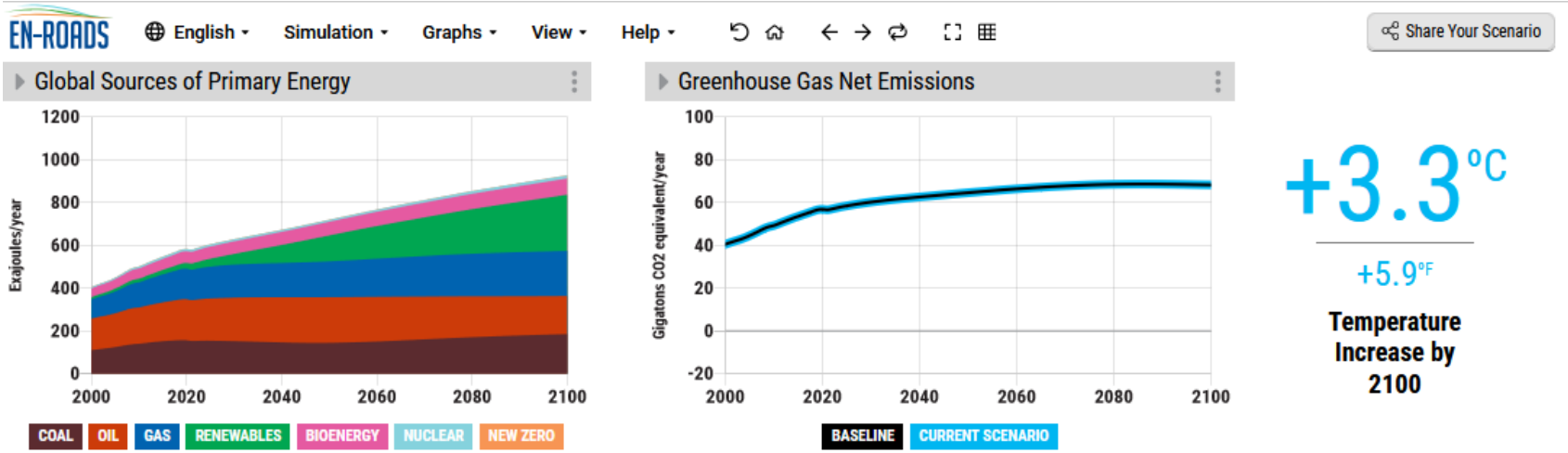
RESOURCE 08: NOAA-Climate Vulnerability Assessments

RESOURCE 09: Fish and Climate Change Database (FiCli, USGS)

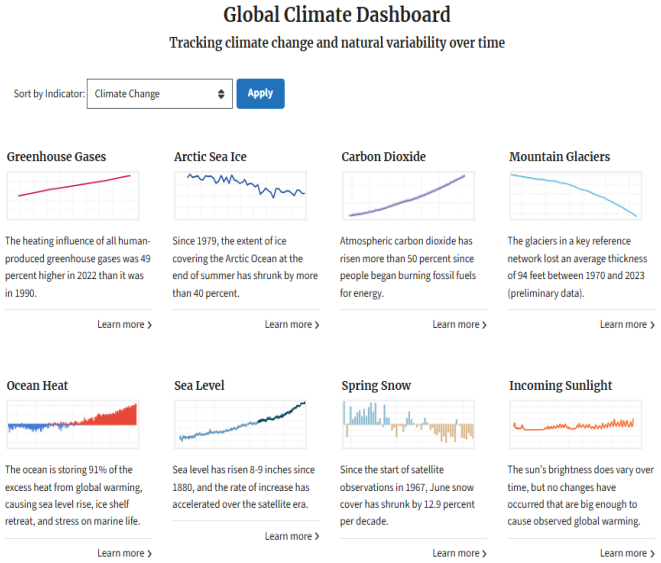
RESOURCE 10: Sixth National Climate Assessment

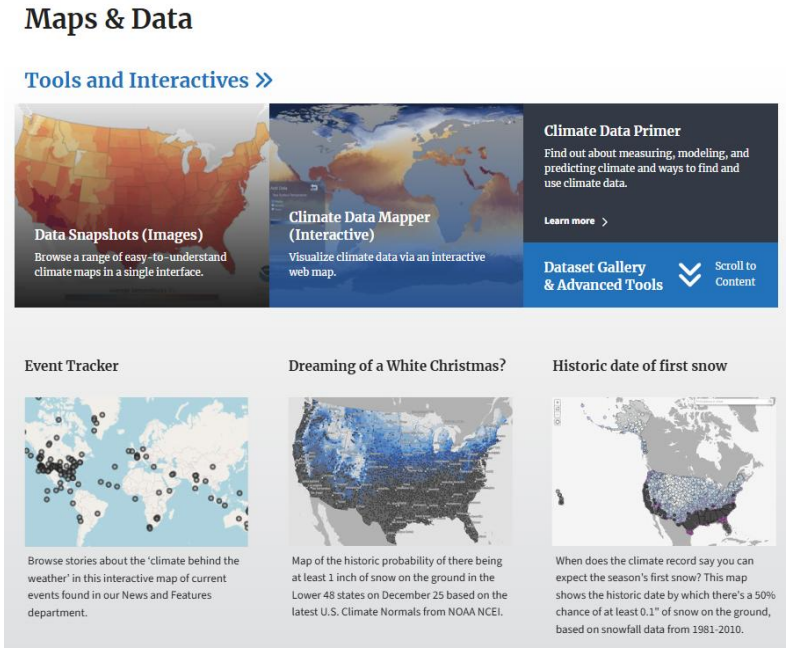
RESOURCE 11: Climate Change Science Basics (citizens climate lobby)

RESOURCE 06: En-Roads – A Global Simulator



RESOURCE 07: Science & Information For a Climate-Smart Nation (climate.gov)

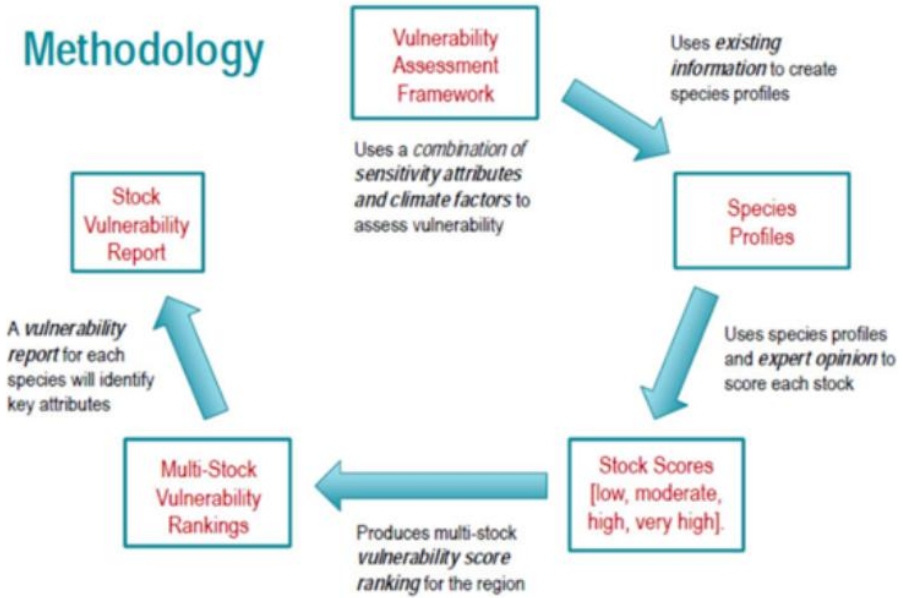




RESOURCE 08: NOAA – Climate Vulnerability Assessments

NOAA Fisheries is assessing the vulnerability of fish stocks…

Dense, but place-based scientific reports and resources for those interested.



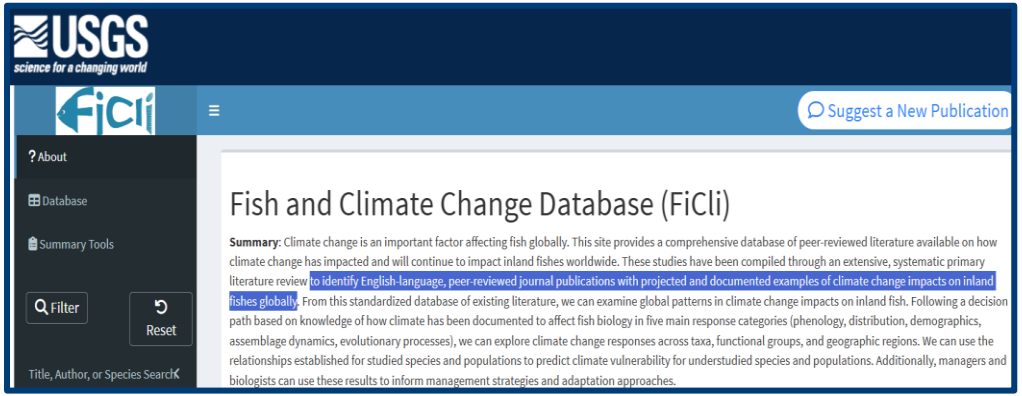
Infographic illustrating the methodology scientists use for the Climate Vulnerability Assessment.

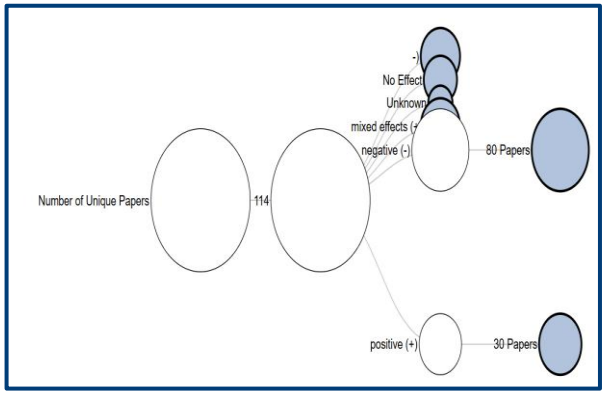
RESOURCE 09: Fish and Climate Change Database (FICLI, USGS)

A comprehensive database

…on how climate change has impacted and

…will impact inland fishes worldwide.





RESOURCE 10: Sixth National Climate Assessment (March 2023)

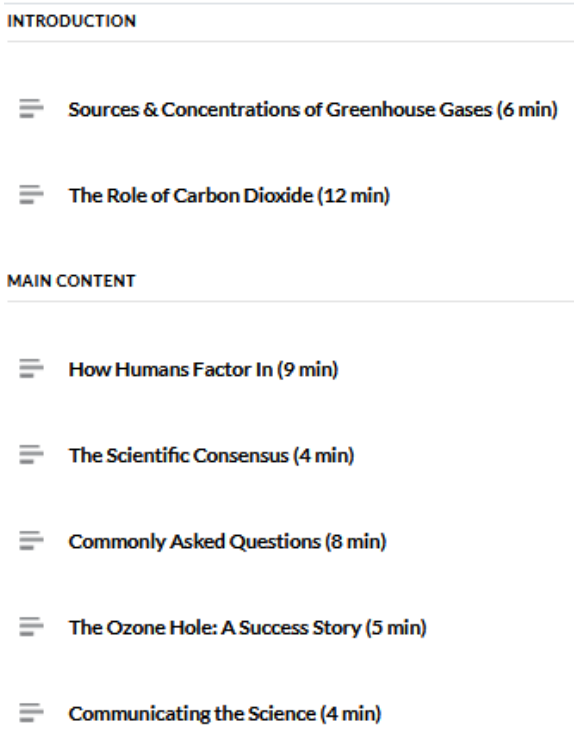
10 Big Findings

1. Human-induced global warming of 1.1 degrees C has spurred changes to the Earth's climate that are unprecedented in recent human history.
2. Climate impacts on people and ecosystems are more widespread and severe than expected, and future risks will escalate rapidly with every fraction of a degree of warming.
3. Adaptation measures can effectively build resilience, but more finance is needed to scale solutions.
4. Some climate impacts are already so severe they cannot be adapted to, leading to losses and damage.
5. Global GHG emissions peak before 2025 in 1.5 degrees C-aligned pathways. (The 1.5 target represents: one to stave off the worst impacts of climate change. At 2 degrees, we anticipate tipping points and cascading and unavoidable severe impacts to ecosystems and humans.)
6. The world must rapidly shift away from burning fossil fuels — the number one cause of the climate crisis.
7. We also need urgent, systemwide transformations to secure a net-zero, climate-resilient future.
8. Carbon removal is now essential to limit global temperature rise to 1.5 degrees C.
9. Climate finance for both mitigation and adaptation must increase dramatically this decade.
10. Climate change — as well as our collective efforts to adapt to and mitigate it — will exacerbate inequity should we fail to ensure a just transition.

Module 02: Science

RESOURCE 11: Climate Change Science Basics - Citizens Climate Lobby

Core Volunteer Training



RESOURCE 12: When I talk about Climate Change, I don't talk about science.

RESOURCE 13: Tips on how to conduct effective public engagement.

RESOURCE 12: When I talk about Climate Change, I Don't Talk about Science

- I talk about Fishing.
- I talk about Flooding.
- I talk about Farming.
- I talk about Faith.
- I talk about the Future.

By Andrew Thaler (Southern Fried Science)

RESOURCE 13: Tips on How to Conduct Effective Public Engagement

The six principles of effective public engagement

- Be a confident communicator.
- Talk about the real world, not abstract ideas.
- Connect with what matters most to your audience.
- Tell a human story.
- Lead with what you know.
- Use effective visuals in your communication.

American Fisheries Society

Climate Change Coordinator Training Plan

January 16 – Science Workshop

February 13 – Adaptation Workshop

March 13 – Advocacy Workshop

April 10 – Education Workshop

NLC Climate Change Work Group

Please join us!

CCWG Module Development Team

Chair, Jeff Holzem - jeff2002h@yahoo.com

Co-chair, Peter Gray - bccpjgray@yahoo.com

Mark van Roojen, Peter Tovar, Neal Anderson, Paul Mckay, Debbie McKay

URL for CCC Resources and Recordings
https://www.tu.org/ClimateChangeCoordinator