

Introduction

- **Anthropogenic Climate Change** is one of the largest environmental challenges we face^[1]
- Temperatures in the Pacific Northwest have increased ~ 1 °F in the last century and are expected to increase another 3-10 °F by end of century^[2]
- Prioritizing climate action in local conservation is essential to reduce climate change's impacts on the environment
- West Multnomah Soil and Water Conservation District (WMSWCD) aims to develop a 'climate lens' in conservation^[3]

With the increasing threat of climate change on ecosystems, WMSWCD aims to develop a 'climate lens' to increase climate action in conservation planning to better protect and preserve local ecosystems.

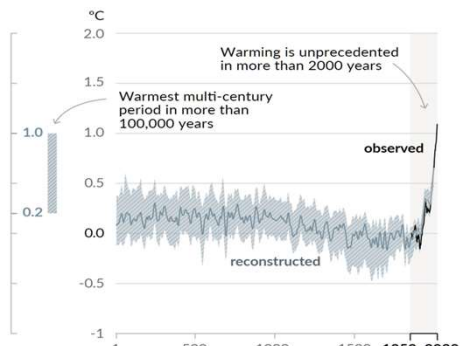


Figure 1. Decadal average change in global temperature in °C. Reconstructed data in grey and observed data seen in black. ^[4]

Objective

- Research climate change and its impacts on ecosystems and communities
- Create catalog of tools to inform conservation and management practices
- Connect with local partners who are prioritizing climate action

The project's main objective is to develop a 'climate lens' through researching climate change impacts, compiling useful tools, and strengthening local partnerships.

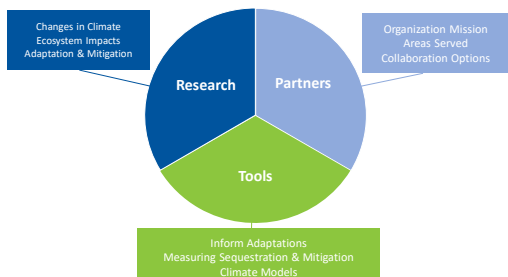


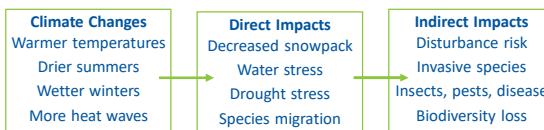
Figure 2. Three main components for developing a 'climate lens' in conservation.

Methods

- Compiled relevant resources regarding climate change projections, system impacts, and mitigation and adaptation strategies
- Completed a literature review of relevant resources and organized important takeaways into an online database
- Reviewed articles regarding frontline communities and analyzed Urban Heat Island maps to identify local communities of concern
- Created multiple presentations and articles to communicate the findings of the project to the District's staff and board

The project consisted of gathering information on the following:
Changes in Oregon's climate
Impacts on specific systems
Mitigation and adaptation strategies
Local communities of concern

Results



System Impacts

- Forests will experience more wildfires and risk habitat loss^[6]
- Agriculture risks lower crop yield and soil health as well as erosion risks^[7]
- Wetlands risk becoming drier and warmer^[8]
- Riparian areas risk increased 'flashiness' and warmer water temperatures^[9]

System Solutions

- Selectively thin forests, monitor and reduce invasive species^[6]
- Incorporate cover cropping and no-tilling practices in agriculture^[10]
- Restore and protect wetlands, forests, and other high carbon-storing areas ^{[11][14]}
- Repair and maintain riparian buffers ^[12]

Communities of Concern

- Downtown and Northwest Industrial areas experience high UHI impacts ^[5]
- Low-income and minority populations are disproportionately affected by impacts ^[13]
- Traditional Ecological Knowledge (TEK) can increase community connectedness and holistically combat climate change ^{[14][15]}

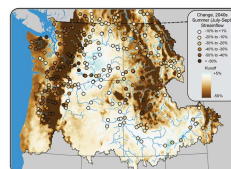


Figure 3. Projected changes in summer streamflow by 2040. ^[2]

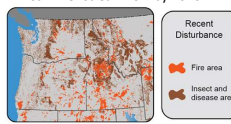


Figure 4. Recent disturbance and projected wildfire changes. ^[2]

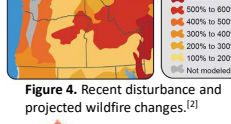


Figure 5. Urban Heat Island (UHI) impacts in Portland neighborhoods. ^[9]

Conclusion

- Many of WMSWCD's current management practices align with adaptation and mitigation practices discovered in research
- Increasing system resilience is a key component to reduce climate change impacts
- Increasing stored carbon in soil, habitat connectivity, and biodiversity were recommended across all systems
- Proforestation, protecting current forests and promoting their growth, should be a main emphasis in management

Management Priorities
Habitat Connectivity
Increase Biodiversity
Protect Large Carbon Stores
Sequester Carbon in Soil

Increasing system resilience can greatly reduce climate change impacts and can be achieved largely by increasing biodiversity and habitat connectivity. Sequestering and protecting stored carbon should also be prioritized in management practices.

Future Steps

- Incorporate key messages, questions, and best management practices into WMSWCD's conservation planning
- Trial tools used to evaluate and inform management practices
- Connect with neighborhood communities and local boards to increase climate action and support frontline communities
- Develop and strengthen partnerships with Indigenous community members to promote community resilience
- Assess and adapt conservation planning based on current climate science

WMSWCD will incorporate key management practices into conservation planning, test new tools to inform and evaluate practices, and strengthen partnerships to increase community resilience.

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