

Climate Change Strategy for Puget Sound

Climate Resilient Riparian Systems Lead

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Background

As the state's lead environmental agency, the Washington State Department of Ecology's (Ecology) mission is to protect, preserve, and enhance the environment for current and future generations. As we work to build a healthier environment, we must make sure no community is overburdened by habitat degradation and environmental pollution, and that we strive to eliminate environmental and health disparities.

Over the past several decades, climate change has increased the severity of wildfires, heatwaves, droughts, and floods across all corners of the state. This, combined with slower moving impacts like sea level rise, ocean acidification, and the loss of mountain snowpack has presented risks and challenges to communities, infrastructure, and natural and working lands across Washington (Ecology 2024).

Healthy riparian habitat — the vegetated areas along rivers and streams — are important for clean, cold water that salmon and other species need. As climate change warms stream temperatures, efforts to protect, improve, and restore riparian habitat are even more critical (Ecology 2024).

Funding program

Ecology, the Washington State Conservation Commission (WSCC), and Bonneville Environmental Foundation (BEF), established a partnership coalition to promote innovative and sustainable approaches to riparian management. The Climate Resilient Riparian Systems Lead (CR2SL) program will administer EPA funding as subawards to Puget Sound partners that result in greater area of riparian acreage protected, restored, and maintained for climate resiliency. Restoration of damaged riparian systems takes partnering across jurisdictional boundaries, working with both private and public landowners, and coordinating across state, federal, and Tribal governments. Partnering on this award is a commitment to working together to solve some of the biggest challenges in Washington's waterways.

Surrounding Puget Sound communities will benefit from resulting riparian restoration efforts as these projects are known to increase canopy cover and green spaces, improve water quality and improve habitat for fish and aquatic life. Partnering on this award is a commitment to working together to solve some of the biggest challenges in Washington's waterways.

The CR2SL program uses the Puget Sound Action Agenda as a framework for implementing investments under this award. The Action Agenda is a comprehensive plan for the long-term

recovery of Puget Sound that includes priorities and support from many partners in recovery. The current Action Agenda covers the years from 2022-2026 and was approved by EPA in 2022. The Action Agenda includes a description of the vision for the recovery of Puget Sound and a framework for working towards the recovery vision. The document outlines several goals, strategies, and measures to track and implement activities in line with the goals for a thriving and healthy Puget Sound.

The CR2SL program is operationalizing some of the activities listed in the [2022-2026 Action Agenda](#)¹, particularly in line with the Action Agenda Strategies listed below. The CR2SL Climate Change Strategy for Puget Sound (Climate Strategy) focuses on the climate resiliency components of the Action Agenda that align with environmental justice goals as well, including:

- Strategy 4: Riparian Areas: Protect and restore riparian areas by improving regulatory frameworks and incentives and increasing funding.
- Strategy 20: Climate Adaptation and Resiliency. Integrate climate adaptation and resilience into all strategies to protect and restore ecosystems and human wellbeing.
- Strategy 23: Good governance. Promote transparent and inclusive governance that engages all peoples equitably, with a focus on expanding trust and inclusion of vulnerable populations and underserved communities.

Several communities throughout Puget Sound hosted feedback workshops on riparian restoration and permanent protection on behalf of the CR2SL program to provide guidance and scoping at the onset of the grant program. Those community representatives expressed several ways that the CR2SL grant program could invest in communities, raise awareness of the benefits of climate resiliency and riparian restoration, and increase community involvement. This is aligned with the Puget Sound Action Agenda's Desired Outcome 5.2 "Increase engagement in and trust of Puget Sound environmental and natural resource governance." It is also aligned with Implementation Strategy 23 "Good Governance."

Nexus with Environmental Justice

Every region of our state has already been affected by climate change and over time these impacts will continue and accelerate, posing increasing threats to our state's economy, our environment, and the health and well-being of our communities. The effects of climate change are especially impactful for Tribes and frontline communities including people of color, low-income individuals, many rural communities, and other vulnerable populations. Because they have often been denied access to important social and economic services, they may not have the resources needed to adapt and prepare for these changing conditions (Ecology 2024). The CR2SL program developed an [Environmental Justice Strategy](#)² (EJ Strategy) due to the strong nexus between climate change impacts and environmental justice. The EJ Strategy was informed largely by findings from the [Environmental Justice Assessment](#)³ (EJ Assessment)

¹ <https://www.psp.wa.gov/2022AAupdate.php>

² <https://apps.ecology.wa.gov/publications/summarypages/2406014.html>

³ <https://apps.ecology.wa.gov/publications/summarypages/2406021.html>

completed by Ecology, in compliance with the HEAL Act, to identify ways that the funding program can equitably distribute benefits and involve impacted communities.

Tribal treaty rights and the roles of Tribes as co-managers are distinct but overlapping with Environmental Justice. Because of this, the CR2SL Lead Team has also developed a [Tribal Engagement Plan](#)⁴.

Climate impacts to overburdened communities

As a part of completing the EJ Assessment, a series of maps was generated by CR2SL GIS staff, including one map that displays an aggregate dataset to identify overburdened, vulnerable, and underserved communities, (Figure 1). This dataset integrates 2010 census tracts ranked 9 or 10 by the Washington Environmental Health Disparities (EHD) Map, tracts identified as "disadvantaged" by the federal Climate and Economic Justice Screening Tool (CEJST), and tracts overlapping with Tribal reservations (as recognized by the Bureau of Indian Affairs).

Climate change impacts disproportionately effect people of color, low-income communities, and those with health disparities across Washington. Human health and wellbeing are especially sensitive to climate impacts, particularly for overburdened and vulnerable communities that already face health disparities (Ecology, 2024).

⁴ <https://apps.ecology.wa.gov/publications/summarypages/2406019.html>

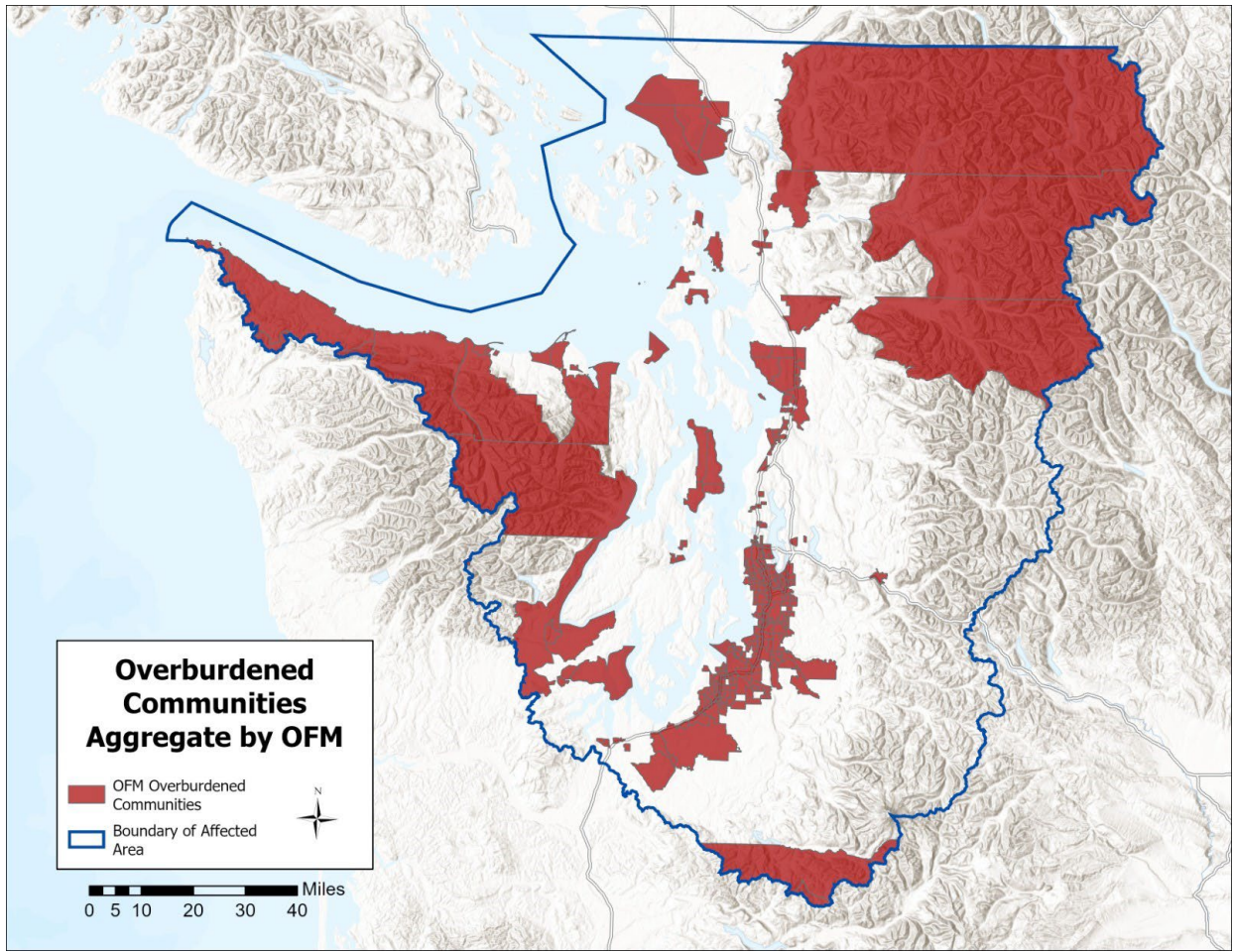


Figure 1 - Overburdened communities located within the program footprint.

Additionally, the CR2SL program is referencing the 2016 NOAA Climate Change Analysis Program (CCAP) percent of impervious surface data in Figure 2 to identify communities that are unable to adapt to climate changes with nature-based solutions. It is possible that these communities will need different adaptation strategies for climate resilience than is offered by the CR2SL grant program.

The CCAP data is an example of one of the ways that applicants to the CR2SL investment opportunities may choose to describe the vulnerability of certain communities to climate change within their proposed focus area, along with descriptions of the proposed nature-based solutions and how those will benefit the surrounding communities.

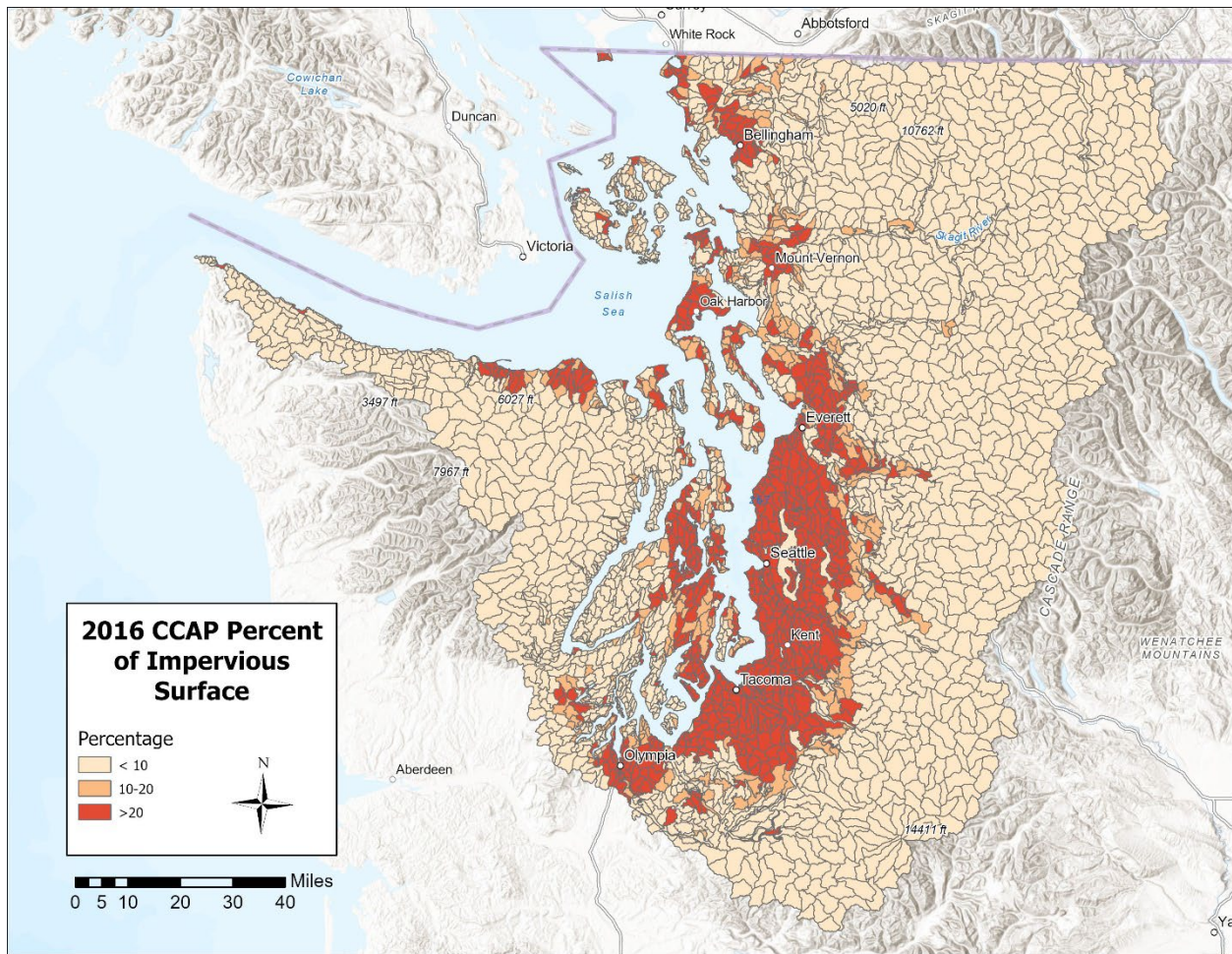


Figure 2 - Percentage of impervious surface located within the program footprint.

Purpose

This Climate Strategy outlines how the CR2SL program will support new, proven, and innovative approaches to prepare for, respond and adapt to climate impacts in Puget Sound rivers. This strategy, along with the CR2SL Environmental Justice Strategy (EJ Strategy), describe some of the many ways applicants might address EJ and climate change needs. The CR2SL program intends to use the EJ and Climate Change Strategies to help identify benefits from investments that catalyze riparian restoration and protection in Puget Sound.

This Climate Strategy suggests a path for the program to support work to identify and investigate solutions to prioritize climate risks facing Puget Sound rivers and aims to improve the coordination and efficiency of local restoration partners on climate change response efforts that align with Tribal, EJ and other local priorities. Efforts to improve climate resilience by restoring and conserving riparian areas deliver impactful and lasting outcomes for surrounding communities and the environment. By using and supporting the best available science and planning to project likely future conditions, the CR2SL program can assist our natural and built

environments with meeting the needs of people and ecosystems across the state for years to come.

The CR2SL program will call for funding proposals containing elements that support improving and promoting climate resiliency in riparian areas throughout Puget Sound, for the benefit of the communities and wildlife that depend on these functioning ecosystems. This Climate Strategy outlines how climate considerations may be included in the CR2SL program, from program development to final closeout, to promote climate resiliency and adaptation in Puget Sound.

Program Overview

The CR2SL 2024 November Solicitation and review process for applications will lead to the allocation of approximately \$9 million in funding from the EPA's National Program Office to riparian restoration focused proposals. As funding allows, another solicitation will be released in Spring of 2025 to include updates to the investment priorities. Over \$17 million dollars will be directed towards activities and programs that increase the amount of riparian acreage protected, restored, and/or maintained for climate resiliency.

The 2024 November Solicitation will encourage applicants to propose collaborative and programmatic projects that include activities from one and up to all of the funding priorities. The focus of future solicitations will be determined after the November 2024 solicitation is complete and may consider smaller scale proposals or activities under a single priority that demonstrate innovation and/or a meaningful local impact.

The final solicitation is anticipated to launch in Fall of 2025 to distribute the remaining grant award funding. Recipients may be eligible to re-apply, subject to satisfactory performance, for additional funding using a simplified process.

Program footprint

The geographic footprint of the CR2SL grant program is the boundary of all 19 Water Resource Inventory Areas (WRIA's) that comprise the Puget Sound basin (see Figure 3). This footprint is inclusive of the entirety of the watersheds, from the headwaters to the point where the rivers enter Puget Sound. Eligible grant applicants focused on river restoration and protection, and climate resiliency activities within this area will be eligible for receiving subawards through the CR2SL grant program. Therefore, any census tracts within, or intersecting, WRIA's 1-19 have the potential to be affected by this action. Communities adjacent to rivers or located within riparian areas are those most likely impacted by the program. At this time, it is unknown who will apply for funding and where projects will be implemented.

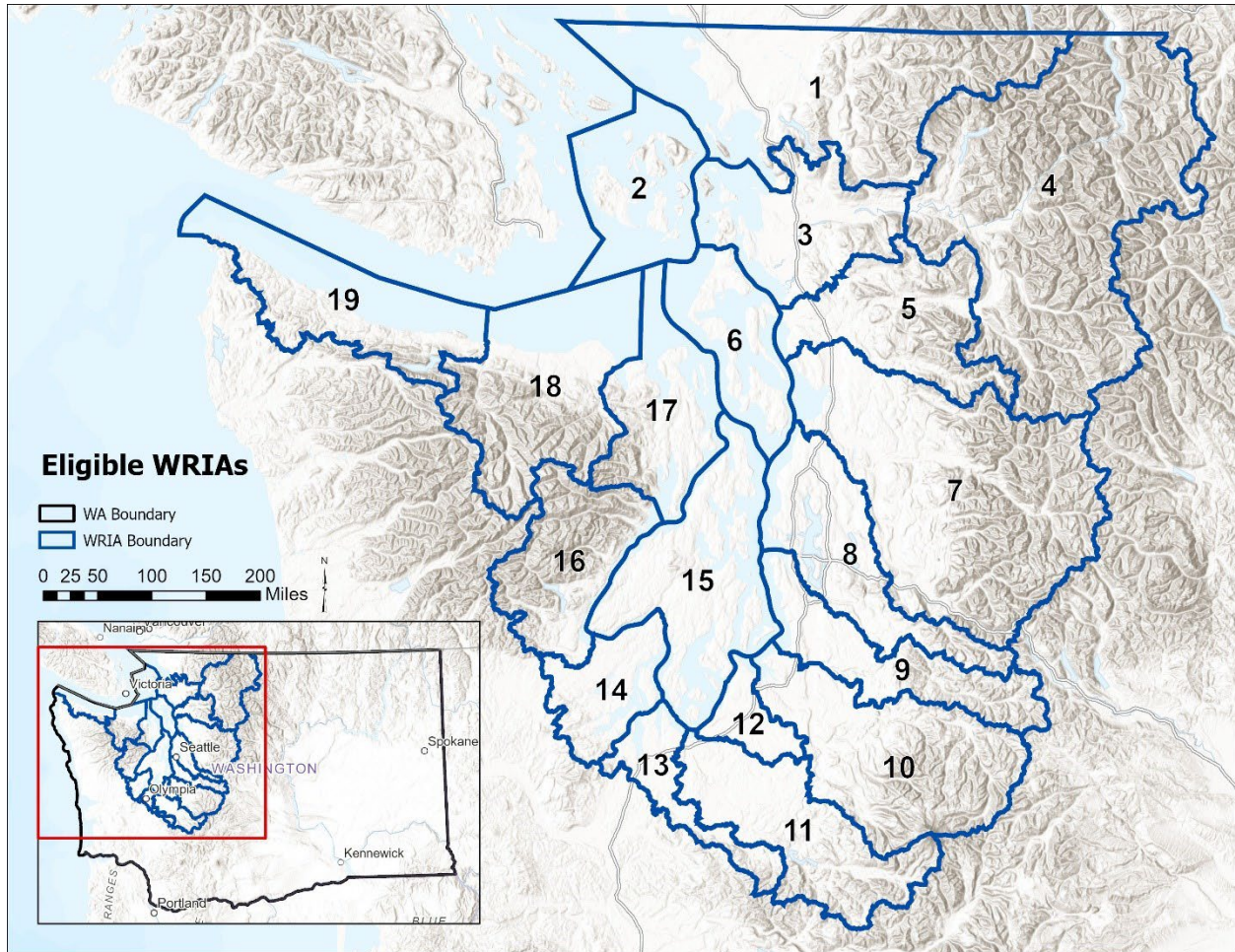


Figure 3 - Map of CR2SL funding program footprint and eligible Water Resource Inventory Areas (WRIAs).

Eligible applicants

The CR2SL program solicits applications from organizations and agencies performing riparian restoration activities within the program footprint as described above, including groups that represent typically overburdened and disadvantaged communities. These include, but are not limited to, Tribal governments, local governments and Community Based Organizations.

Eligible applicants for the CR2SL competitive grant solicitation include, but are not limited to:

- Conservation districts
- Local government: counties, cities/towns
- Federally recognized Tribes and Tribal organizations
- Non-profit organizations that are recognized as tax-exempt by the Internal Revenue Service

- Institutions of higher education if the project is not included in the institution’s statutory responsibilities

State agencies and for-profit entities are not eligible to apply and cannot be lead applicants on a proposal, however they may serve as supporting partners with a non-profit, or otherwise eligible entity, to submit applications. More information about applicant and proposal eligibility is available in the [Climate Resilient Riparian Systems Lead November 2024 Solicitation Funding Guidelines](#)⁵.

Incorporating Climate Resiliency

The CR2SL program aims to support approaches that are new and innovative, alongside those that have strong consensus as being effective. It is not the intent of the program to be prescriptive in the approaches or methodologies, especially since the understanding of how climate change is and will impact riparian ecosystems is constantly evolving. Rather, the goal is to support the expertise and creativity within Puget Sound to address some of the largest environmental and social challenges and prepare for possible future scenarios.

The CR2SL program seeks to support climate resilience and adaptation as a core component. It is inherently the foundation of the resulting riparian restoration, protection, and management work that will take place throughout the Puget Sound.

As such, climate related guidance is built into the application and each of the project category requirements (see the [CR2SL Funding Guidelines](#)) where opportunities were identified by the Program Team and deemed appropriate to include. It should be noted that incorporating climate change into any program, is a complex and multi-faceted, on-going effort that will require adaptive management. Applicants are encouraged to pursue systemic, integrated, multi-partner support to enable the incorporation of climate change-resilient measures and management into potential applications.

The following sections identify the key actions taken by the CR2SL program to maximize support for improving and promoting climate resiliency in rivers throughout Puget Sound, for the benefit of the communities and wildlife that depend upon these functioning ecosystems.

Grant Process Considerations

The CR2SL reviewed current literature related to climate change in Washington and used this information to create:

- The list of eligible activities that incorporates activities directly and indirectly related to climate change and resiliency;
- Where appropriate, the listed desired outcomes for the eligible activity categories include improved or increased climate resiliency;

⁵ <https://apps.ecology.wa.gov/publications/summarypages/2406020.html>

- Requirements for eligible activities that ensure that grant applicants and Recipients are using best practices for climate resiliency;
- References to existing guidance documents and resources for applicants and Recipients to ensure that they have the most current, relevant information and resources available as they plan and implement their proposals.

Proposal Evaluation and Selection

The grant application includes questions that directly request applicants to consider and incorporate climate change and resiliency into their proposals, including:

- A request for the applicant to provide information on how climate change is projected to impact their proposed focus area, in relation to water quality and salmon use;
- A question focused on climate change resilience and adaptation, scored based on how well the proposed work incorporates climate resiliency and supports communities facing climate change.

During proposal evaluations and selection, the CR2SL evaluation team will prioritize proposals that:

- Overcome ecological, social, economic and/or environmental justice barriers.
- Reference Nature-Based Solutions;
- Reference models to address climate change and climate adaptation, and promote ecosystem resilience;
- Develop or are based on climate-informed and climate-adapted site management and maintenance plans;
- Develop or are based on climate-informed and climate-adapted reach, sub-basin, or watershed scale, management and maintenance plans and/or models.

In addition, the CR2SL program will invite Puget Sound climate resilience experts to participate in the reviewing of or scoring of proposals, with specific climate adaptation criteria in mind. Experts may be asked to screen climate-specific sections of the proposals and submit a standalone score to be added to the other scores.

Project Implementation Considerations

CR2SL funding Recipients are expected to incorporate climate change and resiliency into their work in multiple ways:

- During project planning, for both implementation and future maintenance, Recipients must consider climate predictions and projected impacts for the watershed. All restoration activities and permanent protection should use climate projections as a key component to the work;

- Plant selection and maintenance plans to assist with plant establishment must consider site specific needs and climate projections to maximize long-term survival;
- Outreach and education activities must include providing information on the impacts of climate change on riparian zones;
- Recipients will be provided guidance to use recommended BMPs for climate resilient riparian plantings.

Adaptive Management and Project Learning

The CR2SL program aims to build community agreement and knowledge around addressing climate change and building climate resiliency in riparian systems in multiple ways:

- CR2SL is partnering with the [University of Washington Puget Sound Institute](#) to identify and develop metrics that should be measured for specific sites, watersheds, and for the CR2SL program;
- The program will contribute to local capacity for communities to build enduring strategies for climate change and develop best practices for climate resiliency, and actively share out this information;
- Funding will support coordination with regional adaptation focused networks such as the Forest Adaptation Network and Western WA Riparian Workgroup to distribute information about CR2SL and identify future opportunities for collaboration and learning;

Tracking Climate Resiliency Benefits

Ecology published an updated [Washington State Climate Resiliency Strategy](#)⁶ in October 2024. The state strategy includes metrics and indicators to track if and how our work is building climate resilience for Washington.

Indicators and metrics are an imperfect but still useful tool to inform progress, and the CR2SL program will incorporate the following types of indicators identified by the Climate Impacts Group for the state (Washington State Climate Resilience Strategy Appendix I, page 2):

- “Capacity indicators: Do we have the resources we need to do this work?”
- Process indicators: What is being done, spent, and how?
- Outcome indicators: Are we getting the climate resilient Washington we want?”

Indicators and metrics can be useful to communicate the vision of and progress toward adaptation success, make strategic decisions and align plans, justify investments, demonstrate accountability, support learning, and improve effectiveness (Ecology, 2024).

⁶ <https://apps.ecology.wa.gov/publications/documents/2401006.pdf>

The state strategy outlines the following 10 standardized metrics to track the progress of agency actions. The metrics will be collected by Ecology to track its own work, with metrics 1, 2, 4, 6, 7, 8 to be informed by funding recipients who should plan to track and provide this information to Ecology. These metrics include measures of financial, social and environmental factors that 10 state agencies have committed to track and report back to the legislature. CR2SL Recipients will also be required to identify, track and report on additional metrics that align with their grant activities as referenced in Appendix O. of the [CR2SL Funding Guidelines](#)⁷.

The 10 agency metrics track:

1. Collaborating partners.
2. Full-time employees working on climate resilience.
3. Resilience policies, plans, or procedures that coordinate with multiple agencies.
4. People engaged.
5. Dollars distributed to address climate resilience.
6. Plans or assessments completed to understand and manage climate risks.
7. Projects implemented to reduce climate risks.
8. New studies or monitoring programs to inform climate resilience decision-making.
9. Resources to support community climate resilience needs.
10. Relevant state policies and rules updated or created to incorporate climate considerations or guidance.

Communications Plan

A Communication Plan to cover all of the communications activities of the CR2SL program is currently being developed. The plan will identify specific audiences for the grant program and specific grant products, different channels for distributing messages to specific audiences, and how we might measure success of the communication.

Some of the main messages that have been currently identified that we will be tracking include:

- How did the CR2SL program accelerate the overall rate of ecological recovery through the investments?
- How did the CR2SL program change the rate of progress?
- In what ways have equity and environmental justice influenced the grant program?
- What are some of the lessons learned from communities on building programs that lives beyond the grant rounds?

⁷ <https://apps.ecology.wa.gov/publications/summarypages/2406020.html>

- What are some of the best ways to improve and connect cold water seasonal streams to climate resilient projections?
- How are the various buffer widths contributing to recovery? What are the different impacts and challenges of buffer widths?
- How did the CR2SL program help increase riparian restoration and protection in different watersheds?

The goals of the Environmental Justice Strategy will be incorporated into the Communications Plan to include specific metrics and communication strategies for overburdened communities, vulnerable populations and Tribal communities.

Appendix A: Definitions

The following is a list of commonly used climate change related terms and the definitions applied by the CR2SL program:

Climate resiliency:

- The ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate. One way to improve nature’s resilience to climate events is to improve the health and biodiversity of current riparian systems. Climate change creates new risks or challenges to habitats and species throughout Washington state. Resilient and biodiverse systems have opportunities to expand beyond a current footprint and adapt to events like increases in flooding, drought, or extreme weather events.
- The capacity of a system to maintain function in the face of stresses imposed by climate change and to adapt the system to be better prepared for future climate impacts. ([EPA’s Climate Adaptation Action Plan](#)⁸)
- The capacity of interconnected social, economic and ecological systems to cope with a climate change event, trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure. Climate resilience is a subset of resilience against climate-induced or climate-related impacts. ([NCA5 Glossary](#)⁹)

Climate change:

- Changes in average weather conditions that persist over multiple decades or longer. Climate change encompasses both increases and decreases in temperature, as well as shifts in precipitation, changes in frequency and location of severe weather events and changes to other features of the climate system. ([NCA5 Glossary](#))

Adaptive capacity:

- The ability of a human or natural system to adjust to climate change (including climate variability and extremes) by moderating potential damages, taking advantage of opportunities or coping with the consequences. ([EPA Climate Adaptation Action Plan](#))
- The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities or to respond to consequences. ([NCA5 Glossary](#))

Climate adaptation:

- To take action to prepare for and adjust to both the current and projected impacts of climate change. ([EPA’s Climate Adaptation Action Plan](#))
- In human systems, the process of adjustment to actual or expected climate and its effects to moderate harm or exploit beneficial opportunities. In natural systems, the

⁸ <https://www.epa.gov/system/files/documents/2021-09/epa-climate-adaptation-plan-pdf-version.pdf>

⁹ <https://doi.org/10.7930/NCA5.2023.A5>

process of adjustment to actual climate and its effects. Human intervention may facilitate adjustment to expected climate and its effects. ([NCA5 Glossary](#))

Nature-based solutions:

- Actions that protect, sustainably manage, or restore natural or modified ecosystems to address societal challenges, simultaneously providing benefits for people and the environment. Often, these solutions use long-standing conservation approaches, including protection or conservation of natural areas, reforestation, restoration of marshes or other habitats, or sustainable management of farms, fisheries, forests or other resources. Nature-based solutions include other similar terms used by federal agencies, such as green infrastructure, natural and nature-based features, natural climate solutions, and natural infrastructure. (Nature-Based Solutions Roadmap)
- Actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits. (NCA5 Glossary)
- Actions to protect, conserve, restore, and sustainably manage natural or modified ecosystems. These actions use natural features or processes to address public health and environmental challenges while providing multiple benefits to people and nature. (Clarification for types of ‘actions’: NBS encompass a wide range of actions that may include the planning, design, and maintenance of engineering practices that restore, use or enhance natural processes (e.g. green infrastructure, agricultural conservation practices, coastal restoration) and/or protect natural features to preserve ecosystem function (e.g. wetlands, forests, riparian areas, coral reefs)). (EPA Green Infrastructure Federal Collaborative)

Climate mitigation:

- Measures to reduce the amount and rate of future climate change by reduction emissions of heat-trapping gasses or removing carbon dioxide from the atmosphere. ([NCA5 Glossary](#))

Climate equity:

- The goal of recognizing and addressing the unequal burdens made worse by climate change, while ensuring that all people share the benefits of climate protection efforts. Achieving equity means that all people — regardless of their race, color, gender, age, sexuality, national origin, ability, or income — live in safe, healthy, fair communities. ([EPA Climate Equity](#)¹⁰)
- The principle of being fair and impartial and a basis for understanding how the impacts and responses to climate change, including costs and benefits, are distributed in and by society in more or less equal ways. Often aligned with ideas of equality, fairness, and justice and applied with respect to equity in the responsibility for, and distribution of, climate impacts and policies across society, generations and gender, and in the sense of who participates and controls the processes of decision-making. ([NCA5 Glossary](#))

¹⁰ <https://www.epa.gov/climateimpacts/climate-equity>

Climate Justice:

- The fair treatment and meaningful involvement of all communities and stakeholders that are particularly vulnerable to the impacts of climate change. This includes the development and implementation of policies and strategies for anticipating, preparing for, adapting to and recovering from climate impacts. Certain communities and individuals can be particularly vulnerable to the impacts of climate change, including low-income communities, communities of color, very young children, the elderly, people with disabilities and chronic health conditions, and Tribes and Indigenous People. ([EPA Office of Policy Climate Adaptation Implementation Plan](https://www.epa.gov/system/files/documents/2022-10/bh508-OP%20Implementation%20Plan%20FINAL%20September%202022-2022.pdf)¹¹)

¹¹ <https://www.epa.gov/system/files/documents/2022-10/bh508-OP%20Implementation%20Plan%20FINAL%20September%202022-2022.pdf>

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