Targeted Riparian Buffer Incentives Pilot Project

Summary Report

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SKAGIT WATERSHED COUNCIL
A Community Partnership for Salmon

Washington State Conservation Commission

SKAGIT CONSERVATION DISTRICT
SOIL • WATER • WOODLAND

Prepared by

PEAK SUSTAINABILITY

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Executive Summary

The Washington State Conservation Commission (SCC) received proviso funding for the FY21-23 biennium to identify the suite of incentives that can motivate landowners within a targeted stream reach to support the reintroduction of continuous riparian vegetation on both agricultural and adjacent non-agricultural parcels. The concept for this proposed work was inspired by the successful efforts of the Columbia Conservation District and their partners to increase continuous riparian habitat for salmon in the Tucannon River. This proviso-funded project directly addresses recommendations and goals founded in the Lower Skagit River Tributaries Temperature TMDL (Ecology 2008) and Implementation Strategy (Ecology 2020) that necessitate this same kind of focus on temperature-impaired streams and specifically addressing the social sciences that will allow riparian implementers to meet streamside landowners on their terms.

This report includes the findings from the first phase of this pilot project. The goal was to gather input regarding both the existing, successful incentives to motivate landowners to plant riparian habitat and the challenges preventing riparian restoration, as well as how to reduce those barriers. The effort began by analyzing existing incentives and requirements for several federal, state, and local riparian enhancement programs. A review of case studies on successful efforts to encourage the re-establishment of streamside vegetation across several areas of the state was also conducted.

Next, extensive interviews were conducted with a small number of landowners on temperature-impaired streams in Skagit County and a wide range of practitioners from across a four-county region of northwest Washington to gather insights regarding the attractiveness of current funding and incentive programs. The project was also informed by the interviews conducted for the Skagit Conservation District as part of their 2022 Community Based Social Marketing study in the Skagit River drainage funded by the Department of Ecology. Lastly, input was solicited from tribes and other Skagit County stakeholders regarding the project recommendations.

The study revealed many landowners are happy to participate in riparian protection programs. However, concerns were raised by some agricultural landowners that are not fully addressed by the specific programs we evaluated. There is disagreement about the science of streams and the variables that control temperature, what stream health means, and how land use activities and various buffer widths and types affect different stream types. Some landowners fear that “government” will limit the future use of their land. And the word “buffer” in some cases has been connected to regulatory control. As a result of these and other concerns, some landowners indicated they are not interested in enhancing vegetation near streams, even when the projects could provide direct benefits to those landowners.

This analysis showed that while there are barriers associated with existing funding and incentive programs, there are also many opportunities to address them. The following were identified as primary limitations to the success of the statewide riparian restoration effort in Washington:

- Incentive program goals do not always align with landowner goals for managing their land.
- Some programs have minimum buffer widths that are unacceptable to many landowners and do not allow flexibility to tailor the riparian planting area to the landowner’s needs.
- Rental payments in some programs do not offset the production value lost to streamside planting areas or do not provide bonus incentives for extra efforts by the landowner (e.g., wider than the minimum planting buffer width or connecting key stream reaches).

- The application process for some programs is complex, time consuming, and requires the landowner to divulge personal financial information.
- Each existing program stands alone with differing requirements making it challenging to "mix and match" funding sources to meet the specific site and landowner needs.
- The waiting period for funding approval can result in lost interest on the part of landowners.
- Busy landowners require assistance with not only planting, but longer-term maintenance of streamside plantings to address weeds, drainage, and pest control.
- Past efforts to encourage streamside plantings have been guided by strategic plans but implemented opportunistically depending on landowner desires. These efforts have not always focused on the areas of streams most needing additional vegetation for the same reasons.

This report contains a number of statewide recommendations to improve the effectiveness of riparian enhancement programs including the establishment of a statewide campaign focused on addressing landowner barriers that provides increased financial and technical support, shared science, and targeted appropriate communications to measurably increase the restoration of streams in Washington. The bones of this larger program are already in place in Washington and many admirable efforts by dedicated individuals and organizations are currently underway and making significant progress. Efforts need to be expanded and accelerated to address temperature-impaired streams, prevent further decline in salmon populations and to address the inevitable changes that are associated with a changing climate. The recommendations in this report should be considered as a guide for funders and incentive program managers as they review and update their criteria.

In the second phase of this project, recommendations from this study will be field-tested to determine how well they increase the likelihood that landowners in a temperature-impaired stream reach will voluntarily participate in riparian restoration and enhancement programs.

Background

Stream Temperature and Riparian Shade

Water temperature critically affects the overall health of aquatic ecosystems. Stream temperatures can be increased by multiple factors, including but not limited to upland development that increases radiant heat, low stream flow from water withdrawals and climate change, and reduced stream depth due to excessive sedimentation. Excessively high air temperatures such as during the 2021 heat dome can also push maximum temperatures above survival limits for fish. In many locations, shade provided by streamside vegetation is a critical tool for lowering stream temperatures (Ecology 2008; Ecology 2020).

Restoring or maintaining forested riparian areas is essential to moderating temperature in streams. Vegetation can provide other co-benefits as well such as reducing bank erosion, reducing runoff, preventing flood debris from entering fields, and creating habitat and forage for a variety of species including pollinators.

Salmon recovery efforts are underway across most of the state and stream temperatures have been identified as a primary factor in virtually all salmon recovery plans (2021 Governor's salmon strategy update), including the Skagit Chinook Recovery Plan (SRSC and WDFW 2005). The Clean Water Act 303d list maintained by the Department of Ecology indicates that 348 stream segments statewide currently violate water quality standards for temperature. An additional 336 streams have high temperatures and are being addressed through TMDLs and other plans, while another 336 streams are listed for temperature exceedances, but have not been confirmed. Many factors contribute to these elevated temperatures, all of which vary across Washington's watersheds and land uses.

Salmon recovery plans have pointed to the need for restoring vegetation along stream corridors across the state for over 30 years. More recently, the federal listing of Southern Resident Killer Whales spotlights the need to implement salmon recovery plans to provide for the whale's nutritional needs. NOAA and the Department of Fish and Wildlife have developed science-based guidance showing the vegetative characteristics needed to protect most stream and riparian functions.

Statewide Riparian Incentive and Funding Programs

In Washington, streamside landowners steward riparian corridors on their land. At the onset of this project, there were three primary statewide riparian programs providing incentives for riparian plantings to interested landowners in Washington. These include the FSA Conservation Reserve Enhancement Program (CREP) administered by the State Conservation Commission (SCC), the Salmon Recovery Funding Board (SRFB) through the Washington Recreation and Conservation Office (RCO), and Water Quality Combined Funding Program (WQCFP) through Washington Department of Ecology (ECY). All three provide funding and support covering a variety of landscape conditions and are generally designed to accomplish ecosystem improvements, although the three programs have separate primary goals. Each program has specific requirements that are tied to regulations and/or government policies.

The Washington State Conservation Commission also hosts multiple voluntary incentive programs that support riparian projects including Sustainable Farms and Fields, Shellfish Improvement, Natural Resource Investments, and the new Salmon Recovery Funding (SRF) program that was created in FY23. The public-private partnership Floodplains by Design also supports large-scale riparian restoration projects. In addition, Conservation Districts (CDs) also apply through other state and federal funding

sources to restore riparian habitat, and many hold voluntary riparian planting events for their annual Orca Recovery Day in the fall. However, these additional programs were not analyzed.

Landowner participation in these riparian enhancement programs is influenced by many factors. These may include constraints on operations and usable area, costs, time, and physical ability. Additionally, some landowners are concerned about sharing personal information required for government agreements, and some believe that restoration on their land is not necessary or desirable.

State Conservation Commission targeted riparian buffer incentive pilot project

The SCC submitted a supplemental budget request for FY20 to fund pilot projects for its vision of a targeted riparian buffer incentive pilot program. The envisioned state program would not compete with or replace CREP; rather, it would be intended for providing more incentives and outreach to increase landowner participation in CREP and for providing an additional tool for landowners not eligible for CREP. Observational data has suggested that some desired biological responses can be achieved when buffers are created on 70% or more of the length of a riparian corridor. The goal of this program would be to increase participation of both agricultural and non-agricultural landowners along a priority stream reach or watershed in implementation of riparian habitat by offering more buffer width flexibility, resulting in longer stretches of continuous riparian corridors.

An example of a successful targeted riparian incentive effort was undertaken by the Columbia Conservation District in partnership with the Bonneville Power Administration (BPA), Snake River Recovery Office Washington Department of Fish and Wildlife (WDFW), Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe, and the SCC. By providing landowners along the Tucannon River with a range of voluntary incentives through CREP and other programs, they were able to increase swaths of riparian habitat along this tributary of the Columbia River. These tree plantings, in conjunction with other upland and instream improvement practices, helped reduce the summer water temperature by over ten degrees. This collaborative and comprehensive effort significantly increased spring Chinook salmon runs. The SCC wanted to replicate and test this level of successful landowner participation in different areas through its proposed pilot projects.

Some of the incentive approaches considered for this proposed pilot project include:

1. Following an existing model in Oregon that incentivizes landowner engagement in a stream reach by providing a one-time “bonus” when >50% of landowners – both CREP-eligible and those eligible for state program participate in a 5-mile reach. This approach relies not only on conservation district outreach but direct neighbor communication and cooperation. Often times, neighbors make the best spokespersons for successful programs.
2. Identify priority stream reaches where 50% of landowners are participating in CREP and determining what incentives can be offered to non-participatory landowners to bolster participation so that the 70% threshold where biological response can be reached.
3. Evaluate CREP-eligible salmon-bearing streams where participation is minimal or absent because the FSA soil rental rate is not competitive with net commodity values, especially in irrigated commodity crops in eastern Washington. In some prime salmon-bearing stream reaches, there is zero participation. The intention is to test the idea that incentives make the difference between the federal rental rate and net crop value in a one-time award to increase participation in CREP.

4. An extra incentive to enroll at wider buffer widths (100' or greater). If a landowner enrolls at a lesser buffer width, they will receive a standard amount of incentive. If they are willing to enroll at a wider buffer width, they will receive an extra incentive.
5. Allowing landowners to provide input on the selection of plants for the riparian buffer. For example, native flowering shrubs such as salmonberry (*Rubus spectabilis*), flowering red currant (*Ribes sanguineum*), Pacific ninebark (*Physocarpus capitatus*), Nootka rose (*Rosa nutkana*), and mock orange (*Philadelphus lewisii*) can be incorporated into riparian plantings – especially along the outer edge to provide attractive pollinator habitat.

Test Case: Skagit Watershed

The Skagit watershed was chosen as a test case for this project due in part to the substantial restoration efforts already underway and the importance of the watershed to Puget Sound salmon recovery. Partners in the Skagit River watershed have already made notable strides to restore natural systems and improve habitat and water quality conditions. Millions of dollars of federal, state, and local funds have been invested in these efforts and significant improvements have been documented over time. Landowner involvement and cooperation has been a key to these successes. The recent Voluntary Riparian Habitat Restoration 2021 Summary Report released by the Skagit Watershed Council documents 57 acres of new riparian plantings, 74 acres of coniferous under-plantings in deciduous forest, replanting of 51 acres, and maintenance of 492 acres of past plantings, all across 42 unique sites in the Skagit watershed in 2021. About 94% of this planting occurred in the most important sites for salmon recovery. The Watershed Council database shows a total of about 2,000 acres of new plantings across the Skagit floodplain and its tributaries since circa 2000 (SWC 2023).

Stream temperature in selected areas is one of the key limiting factors to the success of salmonid recovery efforts. Skagit County has several streams included on the State 303d list for temperature exceedances, which led to Ecology publishing a Water Quality Improvement Report (Ecology 2008) that set a goal for planting 100% of all riparian areas by 2020 in several tributaries to the lower Skagit River. No tributaries met this goal, leading Ecology to publish an updated Implementation Strategy for those same tributaries to renew efforts and refocus attention on surface water temperatures (Ecology 2020). The Implementation Strategy has several key elements that this report attempts to narrowly focus on for furthering next steps, including outreach and education; restoration efforts; data and research; and strategic planning and policy, with a specific focus on enhancing incentive programs to also benefit landowners.

Review of monitoring data downstream of mature CREP projects shows a positive impact towards lower stream temperatures, primarily on small streams that had few or no existing trees. However, temperatures still exceed the standards in some stream reaches and the Department of Ecology, the Skagit Watershed Council, and local tribes, among others, are concerned that these conditions are also limiting salmonid recovery in this part of the Skagit River system.

Skagit County is enrolled in the Washington State Conservation Commission's Voluntary Stewardship Program (VSP). The VSP operates differently at each enrolled county depending on their locally developed plan, but the goal across all counties is to protect Critical Areas while maintaining agricultural viability. The implementation of the plan is how the success of the VSP program is measured. The VSP program leverages multiple existing funding sources, including several grant programs at the Conservation Commission to support local, voluntary projects on private property.

During development of this report, the Skagit VSP coordinator has strengthened efforts to reach out to landowners and practitioners, ultimately leading to several riparian projects initiated in a short time as funding was available. This initial success illustrates how the VSP can assist in matching a local riparian program to match the goals and needs of the landowner.

Many of the efforts underway to address stream restoration needs across the County are supported by CREP and SRFB funds, administered through the Skagit Conservation District and the Skagit Watershed Council, respectively. In addition to these statewide funding programs, Skagit County provides funding for restoration activities including riparian enhancement from the County's Natural Resource Stewardship Program (NRSP). This program is administered by County staff and is provided in coordination with efforts by the Conservation District, Skagit Watershed Council, and others to address riparian management and other water quality and fish issues.

Introduction

In 2022, the Skagit Watershed Council entered into an agreement with Skagit Conservation District to conduct a study designed to identify opportunities to complement existing streamside vegetation programs and recommend a suite of incentives for both agricultural and non-agricultural landowners to achieve higher awareness, better landowner support and expanded voluntary participation. Increasing voluntary streamside vegetation planting is intended to improve vegetation cover in temperature-impacted streams. The long-term goal or outcome of this focused project is to increase actions that reduce surface water temperatures and water pollution to improve salmon habitat in support of salmon and orca recovery efforts.

A Core Team was established to oversee the project. It was composed of representatives from Washington State Conservation Commission, Skagit Conservation District, and Skagit Watershed Council. The Watershed Council contracted with Peak Sustainability Group to provide project management support and to work with the Core Team to conduct a literature review, lead landowner outreach efforts, interview salmon habitat restoration and land use practitioners, consult with local government units, tribes, and stakeholder groups, and develop a report summarizing project results.

As requested by the Core Team, an informal literature review was conducted in May of 2022 to guide development of the project's outreach approach and to characterize existing incentive programs. Landowner and practitioner outreach was conducted from June through September of 2022, via in-person and virtual meetings. Outreach to local government units, tribes, and stakeholders was conducted at the end of October of 2022 to solicit feedback on a draft report for the project. In addition, the findings of a parallel project examining landowner attitudes about streamside vegetation were also considered.

In this report, landowners are defined as people who own or hold land who may live and/or work on that land. Practitioners are individuals who work with landowners on salmon habitat restoration and other land management outcomes. Stakeholders are non-tribal parties with an interest in stream restoration and other land management goals. It is possible for a person or an organization to fall into more than one of these categories.

This report documents the project research findings and feedback we received in our conversations with landowners and practitioners regarding the effectiveness of the primary state programs as well as the local programs in Skagit County. It also incorporates concepts developed in the Skagit Community Based Social Marketing project for the Department of Ecology. Using this information, we identified shortcomings in each of the programs evaluated and a list of recommendations to strengthen programs statewide.

Literature Review: Barriers and Motivations

Before meeting with landowners and practitioners, Peak Sustainability Group (Peak) reviewed several primary sources that addressed landowner engagement and perceptions of salmon habitat restoration projects in Washington. From these sources, Peak identified several key barriers and motivators for participation in voluntary riparian planting projects. This review informed the Core Team's outreach efforts and questions for landowners and practitioners.

The Core Team also coordinated with the concurrent, but independent and related project called the Community-Based Social Marketing Streamside Riparian Restoration Project (Veda 2022) for the Department of Ecology and Skagit Conservation District. This project team, led by Veda Environmental, included representatives from Skagit Conservation District, Department of Ecology, and Peak Sustainability Group. The Veda project along with the other reports we reviewed highlighted a number of themes which are listed below.

Lack of trust and sense of fairness

- The most significant finding from the CBSM Project was the importance of trust as a significant influencing factor in landowner participation or approval of a streamside vegetation program. Landowners expressed concerns about feelings of one-sidedness or being targeted to do more than their fair share of addressing stream temperature issues in Skagit County. (CBSM Project)
- Survey respondents in Whatcom County reported that trust was equally important or more important than other factors in determining a landowner's willingness to accept and participate in conservation actions. While individuals may define trust differently, the study concluded that "trust is strongly associated to the degree to which the landholder perceives that an individual, institution, or program respects and understands their goals." (Burns 2017)
- Rural landowners, particularly rural agricultural landowners, feel that they are being asked to mitigate for the impact of urban development in central Puget Sound and the resulting loss of salmon and salmon fisheries. This violates a general sense of fairness (Breslow 2001).

Lack of program alignment with landowner needs or goals

- A summary of salmon habitat restoration practitioner interviews stated that landowners do not participate in projects that have no benefit to them. Restoration projects should meet both salmon recovery needs and landowner needs. (Wilson 2022)
- Landowner needs and concerns are stronger conservation motivators from an agricultural perspective (i.e., practicing good stewardship, maintaining soil health, protecting farmland from development, etc.). (Breslow 2001)

Lack of landowner agency and autonomy in programs

- In the context of voluntary planting programs, acceptable and unacceptable actions are the purview of "qualified agency personnel" or "trained personnel," which excludes the landowner from making decisions about their land. One example of this is the so-called "no-touch rule" in the Conservation Reserve Enhancement Program (CREP), which restricts farmer agency over their land and landscape. (Chapman et al. 2019)
- Participation in decision-making, defined as "an organization allowing the opportunity for the landholder to have input on the design, work, or agreement," was reported as most important in determining landowner willingness to accept and participate in conservation actions. (Burns 2017)

- In one study, farmers expressed the importance of autonomy, or being able to independently care for and manage their land. (Breslow 2001)
- Over half of the CBSM Project interviewees discussed autonomy when discussing barriers to participation. Many landowners expressed their concerns about losing the ability to make decisions about their land. (CBSM Project)

Perception of loss

- Some landowners fear that participating in a salmon habitat restoration program will lead to loss of property or reduced access to property (Wilson 2022) or portions of their land. (CBSM Project)
- Several sources noted that the size of buffer widths and installation requirements determines what landowners might lose as a result of buffer regulations, with one immediate concern being the loss of productive land. (CBSM Project, Breslow 2001) Loss of productive land can lead to loss of income, which can lead to loss of the farm itself. This opens up concerns about loss of identity and shared history, as well as broader fears of industrial interests developing agricultural land on a large scale. (Breslow 2001)
- These concerns are magnified when one considers the perception that farming and "the rural way of life" are at risk because of development pressure from urbanization, market globalization, decreased economic viability of farming, decreased recruitment of new farmers, and regulatory burden. (Breslow 2001)

Aesthetic concerns, invasive species, and pests

- Some landowners do not want forested streamside vegetation to block the visibility of farm animals or their view of the creek or river. (Breslow 2001)
- Buffer strips have the potential to become areas for Himalayan blackberry, reed canary grass, knotweed, and other invasive species if not maintained properly. (Breslow 2001)
- Landowners were also concerned about the buffer becoming habitat for herbivorous animals that can damage or alter agricultural land, like elk or beaver. (Breslow 2001)
- Farmers expressed a preference for hedgerows or grass strips rather than a forest buffer because they are "tidy," which demonstrates "care and competence" as a farmer. (Breslow 2001)
- Concerns about invasive species and/or pests invading or overrunning planted streamside areas were brought up in 12 out of 13 interviews. (CBSM Project)

Inflexibility of existing programs

- Several sources noted that existing programs were too rigid in their requirements, with the most notable example being buffer widths. (Wilson 2022, Chapman et al. 2019)
- Salmon habitat restoration project managers highlighted that landowner interests, needs, and landscapes are diverse; projects need to be adaptable to location and landowner. (Wilson 2022)
- Minimum buffer widths required by CREP were restrictive to program participation, especially for small properties. Respondents who opted not to enroll in CREP mentioned several program rules that influenced their decision, including the "no-touch" requirement, minimum buffer width, and the type of buffers (riparian forest) installed by the program. (Chapman et al. 2019)

Level of service provided to landowners

- Project and program managers can provide varying levels of service with respect to planning, site prep, planting, and maintenance for landowners who want to install streamside vegetation

on their property. If executed well, these levels of service can be motivators for participation and lead to positive experiences for landowners. If executed poorly, these levels of service can become barriers to participation. Examples of assistance for landowners include:
    - Planning guidance – help with permits when needed, planting plan;
    - Labor for site prep, planting, and maintenance;
    - Education and knowledge – clear understanding of regulations, where to obtain plants, function and benefits of planted areas, how to maintain planted areas, etc.;
    - Other technical assistance;
    - Point of contact to call with questions;
- Landowners in Thurston County said that the demands of physical labor in waterway restoration could be a barrier due to age, ability, and/or interest. (Thurston County Waterways Survey 2020)
- Landowners stated that the most important things government and non-profits could do to support landowner goals and salmon would be to provide education and training, guidance, and technical assistance to implement projects. (Thurston County Waterways Survey 2020)
- Technical and labor assistance were identified as important, "for some farmers as motivations in their own right and for others as enabling factors to do what they would have liked to do anyway." (Chapman et al. 2019)
- In the CBSM Project, interviewees stated that the time and money required for the installation and maintenance of streamside vegetation was a concern and possible barrier to participation. All of the interviewees that discussed maintenance felt the labor required for maintenance would be a challenging barrier to participation in a streamside vegetation program, both in terms of the effort and equipment required. (CBSM Project)

Program complexity

- Program complexity applies to several parts of a riparian planting programs. The first aspect is the complexity of enrolling in the program, and a second component is the complexity of managing expectations and regulations once a landowner is enrolled. Program complexity can be mediated by the level of service. An experienced and responsive project manager with good customer service skills can make the application process and program expectations more understandable for landowners.
- Salmon habitat restoration project managers in the Lower Columbia region stated that restoration project work has too many people and organizations involved. They also felt that project development and review processes are long and complex. (Wilson 2022)
- One paper indicated that "the sheer volume and complexity of rules under CREP meant that participants had to either trust the Snohomish Conservation District staff person to explain the program to them or attempt to muddle through numerous pages of legal contracts." (Chapman et al. 2019)
- Several CREP participants in Skagit County described CREP rules and regulations as "kind of complicated" and "convoluted bureaucratese." (Breslow 2001)

Financial decision for landowners

- Thurston County survey respondents said that discounts on materials and annual cash incentives would increase their interest in waterway restoration, and that they would want financial assistance if planting a waterway. (Thurston County Waterways Survey 2020)
- Agricultural landowners or land managers indicated that financial assistance is important as either a stand-alone motivator or a means to achieve landowner goals that are already established. (Chapman et al. 2019)

- Interviewees from Chapman et al. expressed that they don't view CREP as a viable program for full-time farmers; the program is seen as providing financial support for people who "want to get out of farming" because it pays well and reduces landowner workload.
- Planting and maintaining buffers is a costly endeavor, and reimbursement programs may not work for some landowners. (Breslow 2001)

Disagreement on "the science" and lack of data

- In the CBSM Project interviews, some landowners mentioned a lack of confidence in the scientific evidence being used to support the stated need for streamside vegetation. This lack of confidence in the science contributes to the perceived lack of trust and transparency in the delivery of these programs by some agencies. (Veda 2022)
- Practitioners in the Lower Columbia region noted that there is a lack of information being shared to convey with certainty the "results" of habitat projects. Landowners want to know how projects will impact their property and salmon. (Wilson 2022)
    - Land use practitioners in the Skagit Valley noted that there is a significant amount of data being collected by various organizations that could be shared with landowners.
- Some farmers disagree with the idea that agricultural activities have impacted salmon populations, that streamside vegetation will achieve intended restoration efforts, and the science that supports both of these ideas. (Breslow 2001)
- Scientific evidence is seen as belonging to different groups, often separated into "our science" and "their science." (Breslow 2001)
- There's a lack of basic agreement on how to apply riparian priorities in the context of water quality listings and salmon impact. How far upstream of, or within side tributaries to temperature-impaired reaches should we increase riparian vegetation? What are streams and what are ditches without fish habitat? What can be done in the face of naturally impaired streams like below large, shallow lakes?

Literature Review: Best Available Science

Stream temperature has been a topic of study for many years. The vast majority of monitoring and evaluation associated with stream temperature has been focused on forest management where riparian management zones are required by the forest practices rules and regulations. Total maximum daily load (TMDL) studies and plans such as the one established for the Lower Skagit tributaries (Ecology 2008) have pointed to the need for improved riparian management adjacent to low elevation streams in areas with agricultural uses. However, a review of scientific studies to establish appropriate levels of protection, particularly to address stream temperature, revealed that significantly less effort has been focused on understanding environments associated with agricultural and urban settings than in the industrial forest environment.

There is extensive literature showing the importance of temperature to the physiology of fish and that high temperatures can impact all life stages of fish (WDFW 2020). Water quality standards for temperature have been established with these impacts considered (Ecology 2008). In addition, there is a very good understanding of the physics of stream heating and cooling including the relative magnitudes of direct and indirect effects of ecosystem changes on stream thermal regimes. Models allowing us to predict conditions are effective and time consuming. “Shade provided by riparian vegetation is generally considered the single most important, albeit not the only, process of the system that humans can directly affect. These findings are undisputed.” (WDFW 2020)

While understanding the impacts of stream temperature on aquatic organisms, especially fish, is clear and the State of Washington has established water quality standards to protect those organisms, observational data pertaining to the specific vegetation needs of streams are limited and the results have been mixed, especially in areas with agriculture (WDFW 2020). “For crop lands, the importance of riparian ecosystem attributes, e.g., vegetation width, height and density, on stream temperatures have been documented (Waite and Carpenter 2000) and, similar to grazed lands, effects differ widely among locations (Benedict and Shaw 2012)” (WDFW 2020).

In addition, studies of the effects of land management on the complete thermal regime of a stream are lacking and those studies completed use only a few statistics to describe summertime peak or average temperatures. As a result, predicting the effects of land management on stream temperatures is difficult.

Finally, the studies identified by the authors vary significantly across geographic regions providing an incomplete mosaic of how stream systems respond to temperature under different management scenarios.

In our research, two studies were identified which attempted to demonstrate the effectiveness of riparian vegetation under a range of conditions in two western Washington locations. One unpublished study demonstrates there is a clear relationship between shading and the modification of stream temperature as a stream flows through a defined reach (Awole, 2021). The study also indicates the degree to which buffer height and width play a role in affecting shade. The second study demonstrates the relationship between shade measurements, buffer vegetation type, buffer widths, and air temperatures over a stream (Benedict, C., and J. Shaw. 2012).

Outreach: Landowner Input

The Core Team narrowed the target area for the landowner input component of this project down to twenty-two parcels located along Hansen Creek, Turner Creek, and East Fork Nookachamps Creek by identifying the most critical salmon habitats in the TMDL area with the least progress to date on voluntary riparian planting projects. Conservation District records show that there are sixteen landowners for these properties. The focus for this landowner input was on areas of these drainages that lacked continuous riparian vegetation.

An invitation for the first meeting, which was a pie social held in person in June of 2022, was mailed to the sixteen landowners by the Conservation District. Four landowners representing three properties were present at that first meeting.

The meeting goals were:

- Discuss key issues and current data for streams and people living along them (e.g., water quality and habitat in the local context, how people would like to use the streams).
- Share the current streamside vegetation program toolbox.
- Solicit input on barriers and positive attributes in the current streamside vegetation program toolbox.
- Discuss improvements that could be made to these programs to address barriers.

Peak Sustainability Group created a single page (11x17, single fold) engaging color brochure to provide background information on the challenges to be addressed, a list of the various attributes of existing streamside vegetation planting programs, and some writing space for landowner input (see Appendix A). This handout was distributed and discussed at the in-person landowner meeting.

The in-person meeting was structured as a facilitated discussion to promote landowner participation and input. Landowners were asked to share their goals and challenges in managing their land adjacent to streams, followed by a discussion of water quality issues and temperature challenges on the target creeks.

In the final part of the meeting, the facilitator asked landowners what they needed or wanted in order to achieve their goals for their land.

Questions were structured as a series of choices about various attributes of existing streamside vegetation planting programs in Skagit County, including:

- Landowner involvement with planning and design
- Financial options for planting, maintenance, and compensation
- Landowner involvement in planting and maintenance
- Preferred width of streamside vegetation

As seen in Figure 1, the choices were presented without revealing any connection to a particular program or source of funding.

Figure 1: Sample question for landowners about their desired level of involvement in planning and designing a planting project.

Following the first meeting, a postcard invitation for a second meeting, held virtually in August of 2022, was sent to landowners who were not present at the first meeting. None of the invited landowners attended the second meeting.

In a third attempt to gain landowner insights, the Core Team contacted a commissioner from one of the drainage districts in the target area. This person was acquainted with many of the landowners in the target area and provided helpful insights regarding the questions the Core Team asked of participants in the first meeting.

For the second phase of the pilot project, the Core Team plans to partner with Skagit County and use the key findings from this report to maximize engagement with additional landowners in priority areas of East Fork Nookachamps Creek and Hansen Creek. Our goal is to provide an expanded suite of incentives to these landowners and develop planting plans for those landowners motivated to increase riparian habitat.

Outreach challenges

This section summarizes lessons learned from landowner outreach for this project.

- The Core Team lacked phone numbers and email addresses for the landowners we were trying to reach. In addition, the Conservation District did not have a working relationship with any of the landowners in the target area. This seriously limited the ability of the Core Team to engage with landowners effectively.
- Very few landowners responded to postcards and letters sent on two occasions even when pie was offered at the first meeting. The Core Team should have considered other approaches other than postcards and letters.
- The Core Team lacked a connection with a trusted leader or champion in the target area, so we had little knowledge of the context and perspectives of the community before trying to contact landowners. Introductions from a trusted member of the community would have helped a great deal.
- We attempted to contact the farmers during the farming season. Clearly, farmers are very busy at this time, which may have limited their interest in responding to outreach.
- Peak Sustainability Group was unaware how we could potentially align riparian restoration efforts with other land management projects like drainage maintenance dredging at the time of our outreach.

Significant Findings: Landowner Meetings

Although the Core Team met with a limited number of landowners through outreach efforts, the responses gained from these efforts are informative and provide valuable perspective about possible landowner goals and desired incentives for planting streamside vegetation.

Landowner goals

- One landowner indicated that the main goal for their streamside land was to improve drainage and downstream flow, which would lead to decreased temperatures and improved fish habitat. They said, "I don't mind trees, but my first priority is draining the land."
- Another landowner wanted to stabilize the creek bank and manage invasive vegetation. They were interested in planting native trees with deep roots to achieve this outcome.
- A third landowner indicated that improving salmon habitat was a significant motivator for their participation in restoration projects in the past, and they were happy to let restoration professionals do whatever was needed to restore the riparian area. They also mentioned losing trees along the stream on their property and issues with Himalayan blackberry.
- The drainage district commissioner broadly summarized the land use goals of their constituents, saying that people in that area want aesthetically pleasing farmland, healthy salmon populations in the creeks, and little to no shade on their fields.

Responses to potential incentives

Planting guidance and access to plants

- One landowner said that they were interested in guidance on which species to plant, receiving free plants, and the conservation district plant sale. They envisioned "a 20-foot buffer, with a nice row of trees around… whatever it takes to make the fish happy and shore up the bank."

Information about local organizations, creek, and regulations

- One landowner asked for more information about local land use organizations and regulations. They said, "This is the first time I'm hearing anything about the creek. I want to know what we can and can't do… You should send out a mailer to folks. When we moved here, I didn't know who to contact about what."

Labor for site prep, planting, and maintenance

- One landowner said that they would like maintenance help and had positive past experiences with the Washington Conservation Corps crews working on their property.
- One landowner stated, "I don't care for a bunch of people on my property, I'll do it myself. I just need to know what I can do and have the paperwork and permission."
- Another landowner said that they did not want or need assistance with planting and maintenance.

Drainage assistance and maintenance

- One landowner reiterated that addressing creek drainage issues was their number one priority, and that "anything beyond drainage is premature."

Annual rental payments

- One landowner indicated that they were uncomfortable with the idea of annual rent payments: "If you guys are paying, it feels like there's strings attached. Then there are your rules and stipulations that are attached to my land."

Outreach: Practitioner Input

To provide a greater understanding of landowner participation and engagement in salmon habitat restoration, the Core Team conducted interviews with salmon habitat restoration and land use practitioners from June to September 2022. The Core Team interviewed 15 current or former practitioners. The core team provided a list of identified practitioners and initial outreach was conducted via email and phone calls. A virtual meeting was held in June 2022 with a group of practitioners, then the Core Team reached out to others for individual interviews. Six out of the 15 practitioners were contacted based on referrals from those on the original list.

Table 1 shows the geographic regions and affiliations of the practitioners interviewed. Nine practitioners worked in Skagit County, three worked in Whatcom County, one worked in Snohomish County, one worked in King County, and one worked at the state level in Washington.

Table 1: Practitioners interviewed, by geographic region

Geographic Region	Number of Practitioners Interviewed
Skagit County *Skagit Conservation District (2)* *Skagit Fisheries Enhancement Group (2)* *Skagit River Systems Cooperative* *Upper Skagit Indian Tribe* *Skagit Land Trust* *Skagit County Public Works* *Department of Fish and Wildlife*	9
Whatcom County *Whatcom Conservation District* *Nooksack Salmon Enhancement Association* *Community project manager*	3
Snohomish County *Snohomish Conservation District*	1
King County *King Conservation District*	1
Washington State *State Conservation Commission*	1

The interview goals were:

- Identify successful (and unsuccessful) approaches employed by practitioners when working with landowners on voluntarily installing streamside vegetation,
- Identify and understand barriers to participation and engagement for various streamside vegetation planting programs, and
- Identify and understand existing incentives for participation and engagement for various streamside vegetation planting programs.

Interviews were conducted as an open discussion to allow interviewees to focus on their specific areas of expertise and the planting programs they were most familiar with. Follow-up questions were asked as needed, and interviews ranged from 15 minutes to 75 minutes in length.

The Core Team asked each practitioner two main questions:

- What general approaches have you found to be successful or unsuccessful when working with landowners on streamside vegetation planting, water quality, and/or watershed restoration?
- Based on your experience, what are the strengths and weaknesses of different programs that encourage planting of streamside vegetation?

Significant Findings: Practitioner Input

Successful Approaches for Landowner Engagement and Participation

In interviews, several themes emerged about successful approaches for landowner participation and engagement when working on voluntary streamside vegetation installation and watershed restoration.

Align action with landowner goals

A common theme that arose in eight interviews was the importance of aligning voluntary streamside planting or other watershed restoration efforts with landowner needs or goals.

- One practitioner discussed the differences in motivation among landowners, saying, "Some people are really interested in restoring salmon, and that can be a good motivator. But some are not. So, you have to offer something that is advantageous to them in the long run." Several interviewees gave examples of projects that had a specific landowner benefit, such as invasive species management, fencing installation, bank stabilization, or drainage maintenance.
- One practitioner said that responding to "adjacent concerns" such as invasive species management "has helped a couple times to convince folks" to participate in riparian planting.
- Another practitioner stated, "Ultimately, [landowners] want it to have a net gain for them. If there's a reason a fence would be needed, then they're getting a real net gain out of it because they're not buying fencing materials or building the fence, we're doing that for them."
- One practitioner said, "How we've been able to get most of our riparian buffers in is by installing fencing or installing bank stabilization when people are losing property… And then a requirement to do that work is the planting. That seems to be the way we've gotten probably 80% of the plantings in the ground."
- One practitioner said, "The best projects that I've done are ones where there's something the landowner wants, and there's a tradeoff between that and getting a buffer established. Say they really want to be able to maintain a watercourse or drainage basins. And in exchange for being able to do that, they agree to plant riparian buffers along the stream afterwards."

Continued contact with landowners

Four practitioners referenced the need for staying connected with landowners about streamside vegetation planting or other restoration work, either before they agreed to a project or during the course of the project.

- One practitioner said that many conservation organizations have to stay in touch with people for years before projects move ahead.
- Another practitioner said that he has talked to some landowners for five to ten years and built up a relationship with them before they agreed to do restoration work on their property.
- One former practitioner said that project managers should "plan on sticking around a long time" and that when they were a project manager, they had a personal weekly quota for landowner property visits to connect with people.

Intrinsic motivation

Three practitioners mentioned that projects are typically more successful (i.e., streamside vegetation provided greater ecological function) when landowners were intrinsically motivated to plant and maintain streamside vegetation on their property.

- One practitioner said that landowners who were required to plant streamside vegetation were often less motivated to maintain that area, while others who wanted to plant streamside vegetation "for the wildlife benefits" were more motivated to maintain it.
- One practitioner described their agency's approach to obtaining streamside vegetation planting commitments from landowners which avoided emphasis on minimum width. They said, "It was really powerful and framed it as "this is a project that you're doing" as opposed to "this is what the law requires you to do." When we changed that, we saw a lot more referrals."
- One practitioner said, "Until you get people to care about their watershed, it won't work. They can do something for a day, week, or month, but unless they learn to love their watershed and what it offers, they won't stick with it."

Neighbor-to-neighbor interactions and trusted community

Four practitioners highlighted the power of neighbor-to-neighbor interactions and how voluntary planting participation can benefit when trusted community members are involved.

- One practitioner said, "Landowners see it done when they see their neighbor participate in something… Neighbors talking to neighbors has always been a very highly successful way of getting people to participate."
- Another practitioner noted that having neighbors who have participated in voluntary programs may make those programs seem more approachable: "I also think that when they see neighbors that have successful projects, they're a little bit more inclined to be interested… then they have references."

Simplify the process for landowners

Depending on the location and land use(s) for a specific piece of property, there may be several programs or funding sources available to the landowner for voluntary planting. Additionally, each program has its own set of rules and regulations that may be difficult to keep track of.

Four practitioners detailed several ways in which they try to reduce complexity for landowners, either while choosing a planting program or during the enrollment process.

- One practitioner described how their agency presented landowners with a shorter list of options that best fit their situation, saying, "There continue to be different programs out there to plant buffers and we tried really hard not burden the landowner or land manager with making the multiple choices of all the programs."
- Another practitioner detailed the same approach, noting "[A certain program] isn't always the best fit." They went on to say, "Sometimes people will call me, and they'll want to do a 100-foot buffer. And I'll tell them they should apply for CREP because then they'll get paid [annually]."
- One practitioner said, "For rural landowners where they're not really using that land for anything, what seems to work is to make it painless for the landowner, if they don't have to do much, don't have to sign very many things."
- One practitioner who mentioned his efforts to simplify the agreements associated with voluntary planting said, "I have a pretty standard landowner agreement, but I always ask people if they want to change anything… It's not a legal document. It states outright that our working

on your property gives us no ownership. We will only come on your property with your permission, we won't let others onto your property without your permission… It's two pages, and I've taken all the legalese out of it."

General Planting Program Observations

Practitioners were asked about the strengths and weaknesses of different streamside vegetation planting programs. Two broad themes that emerged were 1) the importance of flexibility in meeting individual needs and 2) the importance of providing funding, labor, and technical expertise for maintenance.

Flexibility in meeting individual needs

Five practitioners mentioned that flexibility is important for planting programs to meet various landowner needs.

- One practitioner emphasized that a one-size-fits-all approach is unlikely to work over a wide array of regions: "My thought is that you need to have conversations with locals about their issues with the program constraints. Issues will be different in Skagit than they are in Walla-Walla… with a variety of climates and ag commodities, it's hard to have one program that fits them all."
- Another practitioner acknowledged the balance that must be found between program flexibility and rigidity, saying that too much flexibility "could mean that we end up with buffers that aren't meeting the standards that we want for natural resources protection. But at the same time, if we have these overly strict requirements, that's a barrier to us being able to meet landowners halfway."

Flexibility in buffer width

Three of these practitioners referenced flexibility with respect to width of streamside vegetation.

- One noted, "Even the most liberal environmental farmers that I've worked with will bristle about a 150-foot buffer on every salmon-bearing waterway. They're seeing it from that farmland conservation lens."
- Another practitioner discussed the success they had with buffer averaging and said, "If there's a landowner that has an area where they can only plant 15 or 20 feet, and there's a good reason, we've been able to go narrower on the buffer, and then we're going to do 50 feet somewhere else to make up for that loss."
- One practitioner said that programs with flexible buffer widths seem to be more successful in getting people to sign up.

Funding, labor, and technical expertise for maintenance

Five practitioners discussed the necessity of providing funding, labor, and/or technical expertise for project maintenance after planting has been completed.

- One practitioner said, "Maintenance duration is super critical – helping landowners with technical expertise and what's required."
- Another practitioner mentioned the importance of proper maintenance, saying, "Planting and maintenance are expensive, and they take a lot of time. You want to make sure that you have a properly trained crew that's going to maintain it, instead of paying a landowner and saying, "Here you go, keep it alive, you need 80% survival." That landowner may not know anything about planting trees."

- One practitioner discussed how programs could be improved by providing more funding for maintenance, so the landowner is not solely responsible for maintenance: “I went out to this site that was planted in CREP, and the landowner was supposed to maintain it. But the invasives were so intense, he couldn't keep up with it… Having a program that not only pays for the planting but also helps pay for the maintenance would be helpful.”

Strengths and Weaknesses of Specific Programs

Practitioners and program managers were asked about the strengths and weaknesses of different streamside vegetation planting programs, including Conservation Reserve Enhancement Program (CREP), Natural Resource Stewardship Program (NRSP), grants administered by the Salmon Recovery Funding Board (SRFB), and grants administered by the Washington Department of Ecology (Ecology).

Conservation Reserve Enhancement Program (CREP)

CREP engages farmland owners to restore salmon habitat by compensating them for planting native vegetation alongside salmon-bearing streams. The program only applies to agricultural land. The program is administered at the federal level by the Farm Service Agency (FSA), at the state level by the State Conservation Commission, and at the local level by conservation districts. Farmland owners are paid rent for the acreage that they restore for the duration of a 10- or 15-year renewable contract. CREP was the most often discussed streamside vegetation planting program in practitioner interviews, with eleven practitioners who felt that they had enough knowledge and experience with CREP to comment on the program's strengths and weaknesses.

Rental payment

Eight practitioners referenced the rental payment from CREP as a relative strength of the program, with three of those practitioners mentioning that it is the only program in Skagit County that makes annual payments to landowners.

- One practitioner said, "I think one of the great strengths of CREP is that they provide funding to the landowner. In my mind, the only way you're going to get buffers that are that large is to do that. Because when you get that big, it really does feel like a "take" to a lot of people."
- Another practitioner said, "Some landowners, if you're taking their land out of production, want to be compensated in some form. I think the CREP rates went up recently, and I think that was helpful to try to get more people on board."
- One practitioner, who works mainly with agricultural landowners, said, "What's nice about [CREP] from a commercial ag standpoint is the hedgerow option. You can get it planted, you can get maintenance done, you get your annual payment… You can do a 15-year contract, so it's worth it for people even to enroll as a hedgerow. If they have enough area, that would pay for the parcel tax."

Insufficient rental payment

Although the CREP rental payment was seen as a relative strength, seven practitioners discussed how the CREP rental payments are insufficient in various ways.

- One practitioner who works for an organization with land enrolled in CREP said, "[The CREP rental payment] is going to cover half of what it will cost us to plant and maintain. I think it should cover the cost to plant, maintain, and then the rental rate on top of that. The incentives are woefully small." Another practitioner noted that this situation is likely due to stagnant cost share rates for project installation that do not reflect today's costs. Cost share rates for installing CREP projects have been about the same for the past 20 years.
- One practitioner mentioned that there is not a lot of commercial farmland enrolled in CREP in Skagit County, at least in part due to the fact that the rental payment is relatively small compared to the value of keeping farmland in production.

- Another practitioner suggested that riparian buffer programs could be "more successful" than they currently are and said, "[Farmers] have to be paid what the ground is valued for them to be able to [plant streamside vegetation]. Especially when they're responding daily to economic decisions, like whether or not they can spend money on more fuel. Most of them gave up half the fertilizer they're going to actually need this year because of the cost. And all those budgets are so tight that it has to be workable from an economic standpoint with these commercial guys to actually make it happen."

Two practitioners noted that the CREP rental rates are prone to large fluctuations over time, which influences landowners' interest in enrolling. Rental rates are locked in for the duration of a contract once a landowner signs that contract, but when rental rates are low, practitioners tend to see reduced CREP enrollment.

- One practitioner said, "Having CREP evaluate how they determine their payment rates seems like something that could be worked on. For a while, [the CREP rate] was around $700 an acre, and I think it went down to almost $300."
- Another practitioner said, "The CREP rental rate has varied so much over the last five years. It was $900 per acre at one point, then down to $400, now it's back up to $800."

Two practitioners spoke specifically about how CREP is a more financially viable option for less productive marginal farmland.

- One practitioner said, "Most landowners do not give up prime agricultural land [for CREP enrollment]. They put up marginal stuff that they really can't farm or make much money on."
- Another practitioner mentioned that CREP is "really great if it's subpar, marginal, farmable ground, because it's the low wet spot in the field, not the best ag land and better for fish."

Process challenges

Five practitioners referenced that CREP enrollment was heavy on process and paperwork, either for practitioners or for landowners.

- Two of these practitioners noted that sometimes a landowner would change their mind about participating in CREP due to the complexity and lengthy timeline of the CREP enrollment process.
- Another practitioner said, "I don't personally have an opinion one way or another, but I have heard from multiple property owners that it is pretty bureaucratic… I do think CREP would be better suited if they had less paperwork."
- One practitioner expressed frustration with the CREP requirements: "The amount of effort you put into planting a couple thousand trees compared to an Ecology grant is kind of embarrassing. There are so many programmatic rules, every project takes hundreds of hours of staff time to put together the plan, the mapping, to fill out all the reports and forms and do the assessment work and everything. With other sorts of funding, sometimes we just get the landowner to agree to something, have them sign a simple agreement, and you go and plant trees. That's really time efficient."

Natural Resource Stewardship Program (NRSP)

NRSP is a program administered by the Natural Resources Division of the Skagit County Public Works Department. It provides funding and technical assistance for streamside landowners who want to enhance their local watershed through various actions such as streamside plantings, bank stabilization,

and livestock exclusion. Four of the practitioners interviewed felt that they had enough knowledge and experience with NRSP to comment on the program's strengths and weaknesses.

Other stream stewardship actions

Two practitioners stated that one strength of NRSP is that it is not solely focused on planting streamside vegetation. They noted that the program's inclusion of other agricultural best management practices (BMPs) "gets people in the door because it's a benefit to them" and "provides an avenue for discussing riparian buffers with landowners who may not be initially interested."

Smaller streamside vegetation width requirement

Three practitioners mentioned that the smaller streamside vegetation size associated with NRSP (35 feet) is a program strength because it is a more accessible option for landowners with less acreage.

- One practitioner said, "I think NRSP fills a really good void. So many grant programs have made such large buffer requirements, which is great. But [large buffers] don't work for some people."
- Another practitioner said, "For [landowners] to be able to have variable buffers is really important. For a lot of people, a 100-foot buffer would take up their entire property… A lot of landowners just don't want to give up that much land along streams. The programs like NRSP that allow us to get down to around 30 feet have more flexibility and more people that are willing to say yes."

Other strengths and weaknesses

Other strengths and weaknesses of NRSP that were mentioned in practitioner interviews include:

- There is no cost for landowners to participate;
- The NRSP enrollment process is more nimble and less bureaucratic than other programs;
- The program administrator is able to partner with other programs to plant adjacent areas that may not qualify for CREP or other grant funding;
- NRSP does not limit work to only agricultural landowners or only salmon-bearing waterways. Program funding currently comes from the Skagit County Clean Water fund, so projects have to ultimately benefit shellfish downstream; and
- There are no annual payments to landowners.

Salmon Recovery Funding Board (SRFB) Grants

SRFB provides grants to restore degraded salmon habitat or protect existing, high-quality habitat. SRFB grants are facilitated by the Skagit Watershed Council, the lead entity for the Skagit River Watershed. The council receives funding annually, some of which is focused on riparian improvements. This funding has been essential to the efforts to restore riparian areas in the basin.

Typically, projects are proposed, implemented, and maintained by a local non-profit or government organization working with landowners. Four of the practitioners interviewed felt that they had enough knowledge and experience with SRFB to comment on the program's strengths and weaknesses.

Large streamside vegetation requirements

All four practitioners who discussed SRFB grants noted that the streamside vegetation requirements are larger compared to other programs like CREP and NRSP.

- One practitioner stated, "I do work a lot with SRFB. But I don't work a lot with SRFB for planting, I've only done one planting project with them… the buffers are just too big."

- Another practitioner noted, “With some of the other programs like SRFB that require a 100-foot-plus buffer, that's really hard to sell with a private landowner.”

Lag time between application and funding

One practitioner detailed the timeline for receiving SRFB funding and noted that a downside of larger grant programs is that there is usually a significant waiting period between applying for funding and receiving that funding: “For SRFB, you submit grants in March, which means you're working with landowners before then. And you're getting awarded funds either in September or the following June... At least in a SRFB process, you typically know by July or August where you rank in the system and whether you will get funding or not. You won't necessarily get funding for another year, but you know that you're in the queue for it. I think that's a deterrent for landowners as far as trying to keep them engaged.” This lag time is also not eligible for reimbursement by SRFB funding so there is an unfunded step in the process which creates risks to the potential sponsor.

No annual payment

One practitioner mentioned that although SRFB pays for “multiple years of site prep and planting and some maintenance,” the landowner does not receive an annual payment like they would with CREP.

Water Quality Combined Funding Program (WQCFP)

WQCFP provides grants for high-priority water quality projects in Washington. Funding is provided to an intermediary such as a conservation district, county, or conservation-based entity. The program is administered by the Department of Ecology. Six of the practitioners interviewed felt that they had enough knowledge and experience with WQCFP to comment on the program’s strengths and weaknesses.

Large streamside vegetation requirements

Five out of the six practitioners who discussed WQCFP grants noted that the streamside vegetation requirements are large compared to other programs like CREP and NRSP.

- One practitioner said, “For Ecology money, what was frustrating to me was that the buffer became the requirement. For water quality funding, maybe the biggest issue on the property was the manure management. Early in my career we could just fund a manure bin and build them back far enough away from the waterway that we're dealing with the main problem, the manure. Now, I think it continues to be the case that the buffer becomes the requirement and after you meet that requirement you can do anything else. Their buffer requirements were large buffers, 150 feet.”
- Another practitioner said that Ecology funding was “frustrating” because of large buffer guidelines, and as a result, “they’re really only funding projects on land trust land where they’re willing to do big fat buffers.”
- One practitioner stated, “I think [Ecology] has done a pretty big disservice in requiring 100-foot buffers. They awarded us money for a dam removal project, which is awesome. But the amount of energy I had to spend to justify why I can't put 100-foot buffer in... this is a dam removal project, which is good for water quality.”

Lag time between application and funding

One practitioner detailed the timeline for receiving WQCFP funding and noted that a downside of larger grant programs is that there is usually a significant waiting period between applying for funding and receiving that funding: “We submitted grants to Ecology in October 2021, so we were working with

landowners in the summer before that. And we still don't have contracts to work on those yet. It's a long lag time… nine months later, we get that yes or no, and then it's six months after that you might be able to start doing some site prep." This lag time is also not eligible for reimbursement by SRFB funding so there is an unfunded step in the process which creates risks to the potential sponsor.

No annual payment

One practitioner mentioned that although WQCFP pays for "multiple years of site prep and planting and some maintenance," the landowner does not receive an annual payment like they would with CREP.

Barriers and Limitations

This section summarizes the barriers and limitations associated with streamside vegetation planting programs in Skagit County.

- It is challenging to contact and engage landowners. This is especially true during farming season.
- There is limited alignment between landowner goals (other than salmon habitat restoration) and program offerings. Many Skagit County practitioners understand and seek out opportunities for alignment between landowner goals and program offerings. However, practitioners are limited by the rules and requirements of various programs and available funding sources.
- Some property owners question whether the conditions on their property impact aquatic health.
- There is a relative lack of financial incentives for riparian planting in Skagit County. CREP was mentioned by several practitioners as the only program that pays landowners annually. More widespread availability of rental payments or increased annual rental payments could make planting streamside vegetation a more viable option for individuals and communities who need to consider the financial impacts of putting productive land into streamside vegetation planting.
- There is insufficient funding to support general program operations, maintenance, and labor. This leads to instability in the program and turnover of employees. Stability is needed to create trust.
- The term “buffer” has negative connotations for some landowners.
- Some landowners don’t trust public programs. The trust issues tend to fall into four categories:
    - Trust in the agencies/people delivering the program.
    - Trust regarding the basis of the science used and whose science was correct or believable.
    - Trust regarding the transparency of the various agencies.
    - Trust in the intentions/goals of any riparian buffer program.
- There is a lack of funding for streamside vegetation maintenance. This work is an added burden for landowners that enroll in planting programs.
- Several of the streamside vegetation planting programs in Skagit County have complex enrollment processes and associated regulations. There are also local land use regulations to consider. Landowners may have difficulty navigating these systems and expectations.
- Several of the streamside vegetation planting programs in Skagit County have width requirements that are too large and inflexible for many private landowners.
- Incentives do not currently increase with width of riparian plantings (as opposed to area) so aren’t structured to reflect the importance of wider buffers to ecological functions and needs.
- Landowners may not appreciate the importance of instream habitat complexity, in addition to shading. It is important to consider instream habitat enhancements and other functions as well as shade.

- The most temperature-impacted streams or areas needing plantings are not always where voluntary streamside programs focus. There is a need to identify key reaches of streams to target incentives and support programs.
- Some landowners may not want to reveal their financial statements through an application process. Some applications require sharing considerable information about landowner finances.
- Landowners are concerned that if they participate in a planting program, they will not be able to make decisions about their land.
- This assessment did not thoroughly investigate barriers and limitations of existing programs for streamside landowners in more urban/suburban/residential stream reaches like those in Skagit's temperature-impaired waterways originating in the upland areas of Mount Vernon. Smaller streamside parcels with significant building footprints and adjacent neighbors, especially those built before the advent of modern critical area ordinances, exhibit little room to meet science-driven standards for buffer widths.

Recommendations

The Core Team recommends the following steps for improving the process of restoring riparian areas in agricultural areas of Washington.

Overarching recommendation

Expand overall funding and technical assistance with the goals of:

- Incentivizing voluntary programs to meet landowner needs, to expand participation, and to remove landowner barriers;
- Promoting the growth of streamside vegetation that is continuous with variable widths that will meet the ecological need; and
- Using designed riparian prescriptions to address stream temperature, support farm productivity, and reduce the risk of conversion.

Specific Recommendations

Promote implementation:

- Establish a state program to complement the CREP program.
- Expand financial incentives and flexibility of current incentive programs to provide:
    - Higher soil-based rental payments and financial incentives;
    - Higher rental rates for wider vegetation plantings;
    - Higher incentives where key stream segments are connected;
    - Incentives for successfully encouraging neighbors to participate; and
    - Rental payments for shaded areas of fields.
- Establish an outreach campaign based on the findings and recommendations for outreach and engagement as identified in the Skagit Community Based Social Marketing Riparian Restoration Campaign project (Veda, 2022). The language recommended and approaches suggested in the report for working with landowners will significantly increase interest in restoration efforts.
- Allow landowners to help choose some of the riparian species so they have some ownership in the process and resulting new habitat. For example,
- Expand basic education and engagement regarding water quality concerns.
    - Work with young people to get engaged in the process of restoring streams.
    - Provide a publicly accessible place for storage of stream temperature and vegetation literature sources. Much of the science of stream temperature and riparian areas is behind a pay wall and unavailable to the public.
    - Install real-time web-based stream temperature gauges in select streams so all interested parties have access to the data and can track improvements over time associated with improved cover and connectivity for streamside vegetation restoration. Include a riparian planting project database for better implementation tracking, coordination, and public reporting.

- Develop and utilize sub-basin planning for important criteria such as fish presence, riparian characterizations, and shade analyses to focus outreach and implementation into streamside areas that will have the most benefit for shade and temperature reduction and the least impact on the economy and property rights. Recent studies provide some new tools that should be used to educate communities on the specific areas of streams that require additional shade.
- Increase funding and operational support for local project facilitators with the following:
    - "One-stop shopping" for the landowners to work with a single point of contact who coordinates planning and communications with a local practitioner team;
    - A simplified enrollment process that addresses the grant requirements and all appropriate land use regulations;
    - Assistance with project design, component selection, and coordination of implementation and maintenance activities with local restoration entities; and
    - A "mix and match" approach to developing incentive packages for landowner's projects;
- Establish ID teams made up of local experts similar to those used by DNR in forest practices to come up with a site-specific recommendation for landowners volunteering to participate in a program.
- Where other similar processes are not in place, provide funding for CRM practitioner teams in key watersheds.
- Significantly expand the WCC throughout the state and/or support existing local crews with a full range of capacities associated with riparian vegetation planting and maintenance as well as other protective measures.
- Pair projects whenever possible with other programs such as drainage improvement works and local mitigation requirements.
- Increase planting stock availability and accessibility. Ensure local and climate adaptation of planting stock where possible.
- Evaluate and update funding program criteria as indicated in the Programmatic Recommendations shown below.
- Investigate opportunities to enhance incentives for riparian restoration by offering carbon credits.
- Invest more outreach and analysis into understanding the needs and constraints of more urban streamside landowners to better recommend improvements in riparian incentive program strategies for these highly constrained areas.

Monitoring and adaptive management:

- Design and conduct a study to establish the effectiveness of riparian buffers on stream temperature under varying conditions around the state similar to the Timber Fish and Wildlife studies for Forest Practices. This study should be designed with farm community representatives, agencies, tribes, environmental organizations, and research institutes engaged to ensure the results are supported by all.

- A study could be undertaken by the proposed SCC Integrated Science Hub for Agriculture and Ecosystems, which will explore the applied and social sciences of voluntary conservation and its role in addressing natural resource concerns at the watershed level.

Programmatic Recommendations

Conservation Reserve Enhancement Program recommendations

- Evaluate how payment rates are determined to address variability and adequacy. Consider payments based on adjacent crop types.
- To increase use, target CREP to marginal farmland.
- Seek ways to streamline the application process.
- Development of a state program that complements the CREP program.

NRSP recommendations

- Continue pairing funding with partners such as CREP and the County's drainage utility.
- Explore pairing funding with other programs for the rental payment to make a more attractive package.

Salmon Recovery Funding Board program recommendations

- Seek ways to streamline the process and reduce lag time.
- Consider pairing funding with other programs for the rental payment to make a more attractive package.

WQCFP recommendations

- Seek ways to streamline the process and reduce lag time.
- Consider pairing funding with other programs for the rental payment to make a more attractive package.

Appendix A: Handout Designed for Landowner Meetings

To develop the handout, Peak Sustainability Group first evaluated program attributes for the four primary funding programs suggested by the Core Team: the Conservation Reserve Enhancement Program (CREP), the Natural Resource Stewardship Program (NRSP), Salmon Recovery Funding Board (SRFB), and the Department of Ecology's Water Quality Combined Funding Program (WQCFP). Attributes included:

- Eligible activities (focused on riparian planting)
- Eligible geographic area
- Application process complexity
- Planning or design assistance
- Average time elapsed from interested landowner contacting agency to contract start
- Contract structure and key provisions
- General project approach
- Financial information
- Minimum buffer width
- Responsibility for planting
- Responsibility for maintenance
- Vegetation specifications
- Time until project "completion" (trees planted)
- Program specialist and contact information
- Other relevant information

The program specialist from each agency was interviewed to capture these attributes. Peak narrowed down the list to the attributes that provided the best overview of what is currently available and practicable as well as the attributes that most influence a landowner's decision based on findings in the literature review period. Peak also added several ideas to the list of attributes that came from literature review. Attributes were grouped into six *themes* so that input would create a logical path for the reader. Attributes were not tied to any program in order to solicit input while limiting bias.

Skagit Riparian Buffer Incentives Pilot Project

Skagit Conservation District
(360) 428-4313
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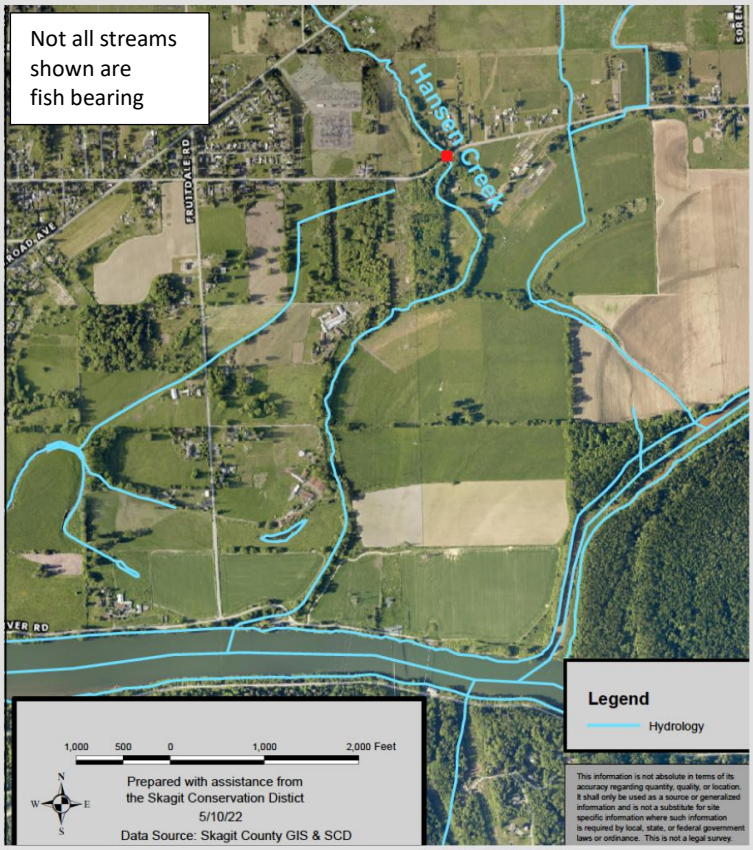
Water temperature critically affects the overall health of aquatic ecosystems. Several Skagit Valley streams are reaching temperatures in the summer months that can be lethal to juvenile salmon.

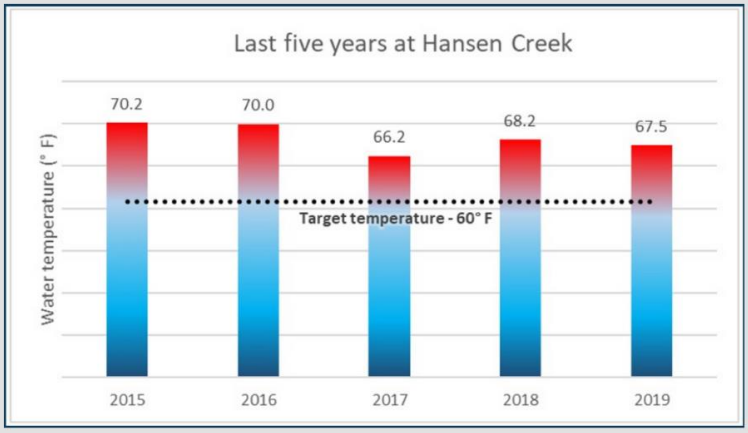
While stream temperatures are affected by multiple factors, in many locations, shade provided by stream-side vegetation is a critical tool for lowering stream temperatures. Restoring or maintaining forested riparian areas is essential.

The objective of these meetings is to talk about solutions to reduce water temperature and improve habitat. We want to hear your thoughts about existing and new potential riparian restoration incentive opportunities available to you.

The information and perspectives that you share with this project will be used as guidance for the non-regulatory State Conservation Commission and Skagit Conservation District.



Potential voluntary riparian buffer sites along Hansen Creek. The red dot marks the temperature monitoring site.



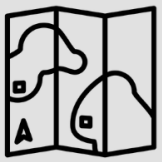
Hansen Creek is one area experiencing temperatures that are lethal to fish on an annual basis.

1

This section describes the features of various voluntary riparian planting programs that currently exist in Skagit County. Landowner participation in these programs is optional.

This handout is intended to help you prepare for meeting discussions by marking your preferences and taking notes, if you wish to do so. We will not be collecting this handout.

Your level of involvement in planning and design



- ☐ I would like to plan and design a project with **minimal assistance**.
- ☐ I would like **assistance with parts** of the planning and design process.
- ☐ I would like a **technical specialist** to plan and design a project.

Financial options for planting, maintenance, and compensation

- ☐ I'm interested in receiving an **annual rental payment.**
- ☐ I'm interested in **reimbursement for the full cost of buffer set-up**.
- ☐ I'm interested in having a **local conservation partner manage the funding**, so that **I am not financially responsible for the buffer project.**

I would feel comfortable receiving funding from...

- ☐ Skagit Conservation District
- ☐ Department of Ecology
- ☐ Skagit County
- ☐ Skagit Watershed Council
- ☐ Other:

The range of stream buffer widths **currently eligible for funding** is **50-200 feet**.

- ☐ I'm **interested** in planting a buffer in this range.
- ☐ I'm **not interested** in planting a buffer in this range.

Your level of involvement in planting

- ☐ I would prefer to plant the buffer **myself**.
- ☐ I would prefer to **hire a contractor** to plant the buffer.
- ☐ I would prefer that a **local conservation partner** plant the buffer.
- I would prefer to **be involved in the planting** but have a **local conservation partner manage** the planting project.

Your level of involvement in maintenance

- ☐ I would prefer to maintain the planted buffer **myself**.
- ☐ I would prefer to **hire a contractor** to maintain the buffer.
- ☐ I would prefer that a **local conservation partner** maintain the buffer.
- ☐ I would prefer to be **involved in maintenance** but have a **local conservation partner manage** the maintenance projects and schedule.

The time period for assistance with buffer maintenance varies by program.

- ☐ I would like to **maintain the buffer myself after planting** with a **mid-project check-in** (site observation and recommendations to improve the buffer if needed).
- ☐ I would like **funding** for buffer maintenance **up to two years after planting**.
- ☐ I would like **someone else** to **actively maintain the buffer** for **three years after planting.**
- ☐ I would like a **local conservation partner** to conduct **three to eight years of buffer maintenance after planting.**

The partial list below contains ideas that could be used in riparian buffer programs.

There is also space on the back of this handout for you to record other ideas.

- ☐ Increase in annual rental rate payments for CREP (Conservation Reserve Enhancement Program)
- ☐ Assistance with site prep and/or maintenance until plants are established
- ☐ Increased availability of plants and materials
- ☐ Assistance paying for and installing fencing or livestock watering system
- ☐ One-time sign-up bonus if a certain percentage of landowners in a designated stream area participate in riparian plantings
- ☐ Landowner chooses riparian plants and shrubs for buffer edge for aesthetics, pollinators, etc.
- ☐ Commodity buffers that use more customized compensation rates (based on adjacent crop rotation values) to grow buffers
- ☐ Managed working buffers that allow harvestable crops grown within the buffer such as fruit/nut trees and harvesting of understory commodities like native berries, foliage for floral arrangements (e.g., salal, evergreen huckleberry, etc.), mushrooms, etc.
- ☐ An extra incentive to enroll a larger riparian area or other benchmark widths
- ☐ Other:

3

Here are the topics we will discuss at our next meeting. Please review these questions ahead of time and make notes if needed.

1) If you have or have not already planted a riparian buffer, are there any specific reasons why?

2) What features of the existing riparian buffer planting programs are attractive to you?

3) What features of the existing riparian buffer planting programs would need to be changed for you to participate?

4) Do you have other ideas for riparian buffer programs for us to consider?

Thank you for your time and participation in this process!

Please contact the **Skagit Conservation District** for more information on this project or if you are interested in planting a riparian buffer.

(360) 428-4313

skagitcd@skagitcd.org

Appendix B: Summary of Current Skagit Riparian Incentive Programs

	NRSP	CREP (SCD, SCC)	Salmon Recovery, PSAR (SRFB)	WQC Funding Program (CCW, 319, etc.)
Summary	Funding and assistance for streamside landowners who want to enhance the watershed in which they live.	Pays landowners to establish buffers of native trees and shrubs along fish-bearing streams and rivers.	Protect and restore salmon habitat to recover threatened species and increase harvestable salmon.	Grants and loans for high-priority water quality projects in WA. Funding provided to an intermediary (Conservation District, county, or other conservation-based entity), not directly to individual landowners.
Eligible activities	• Plantings • Invasive control and removal • Fencing, livestock watering and crossings • Bank stabilization • Stream restoration • Other BMPs	• Site preparation • Plantings • Invasive control and removal • Fencing, livestock watering • Stream restoration • Other BMPs	• Plantings and invasive control • Restoring estuaries, streams, floodplains, and wetlands • Fish passage • Voluntary land or easement purchases • Monitoring	Nonpoint source activities: • Restoration planning and implementation, i.e., riparian buffers • Agricultural BMPs • Demonstration nonpoint BMP projects (with Ecology preapproval)
Eligible areas and focus areas	Skagit County Focus areas include: Nookachamps, Samish River Hansen, Colony, Fisher Creeks Carpenter Creek / Hill Ditch Maddox Creek / Big Ditch All streamside properties are eligible.	Land must be owned or operated for at least 12 months prior to CREP enrollment. Cropland or marginal pastureland, adjacent to eligible stream segments. Generally, segments must have at least one species of Pacific salmon or steelhead present.	Mainstem Skagit and fourteen key salmon-bearing tributaries including Hansen, Nookachamps, Day Creek. Ditches and some smaller headwaters don't qualify.	State-wide Ecology discussion of developing focus areas to target funding in the future. Skagit would likely be a focus area.

Application process complexity	Simple, minimal information required. Can call/email NRSP staff to apply.	Bureaucratic. FSA has changed the order of information and contracts in recent years (i.e. landowner signs a contract before planting plan is completed), frustrating.		300-page document with guidelines for WQCFP. Landowner isn't applying directly, but a project partner (SFEG, SLT, SRSC, etc.) would apply.
Planning or design assistance	County pays for everything: all design planning, purchasing, implementation, and maintenance. Landowners can be involved to the degree that they want to be.	Skagit CD does all planning, design, planting program, etc.		Applicant workshops provided. Planning help not provided by ECY but can reimburse planning and technical assistance costs for water quality improvements.
Average time from landowner contacting agency to start of contract	Depends on the project type and time of year. Average of ~3 months to go from application/interest to start of project.	For Oct 2022 contract start: Skagit CD submits information to FSA by June 2022. ~3 months		~10 months between application close and final offer made by ECY. Then up to ~6 months to negotiate and sign agreements.
Contract information and project approach	10-year Landowner Agreement signed before starting project to ensure that project is completed and maintained as designed (e.g., no removal of trees)	10- or 15-year rental contracts with FSA, land removed from production and grazing. CD works with landowners on planning and management. Landowner responsible for implementation and reimbursement.	Typically, projects are proposed, implemented, and maintained by a local non-profit or government once landowner approves plans and agrees to not harm plantings for 10 years.	All contracts held between the grant recipient (conservation-based entity) and Ecology. Grant recipient then works with landowners and helps cover the cost of projects.
Financial information	Free and voluntary for landowners.	Annual rental payments and signing bonus. Rental rates can fluctuate based on federal administration.	Landowner has no financial responsibility since local sponsor manages grant funding source. Grants can fund voluntary easements or land	In general, projects are coordinated with another partner (Skagit CD, SFEG, etc.), who can use the funds to pay for materials, signage, and staff time.

		Current[1] rates range from $276-$867/acre, determined by soil productivity and land zoning. On Skagit Valley floor, in silt/sandy loam, rates will be toward higher end. Landowner reimbursed 100% of eligible costs for set-up. $100/acre signing bonus for 10-year contract, $150/acre signing bonus for 15-year contract.	purchases at landowner's discretion.	Landowner has no financial responsibility since local sponsor manages grant funding source.
Minimum buffer width	35 feet. Can be averaged with good cause.	50 feet. There are provisions for 35 feet, but only to go around obstacles such as buildings.	Generally, site potential tree height (100-250 feet) from water's edge based on soil types but exemptions exist.	Generally 100 feet, based on western WA Dept. of Ecology buffer guidance.
Planting responsibility	County or contractor installs plants.	Landowner's responsibility. Can hire a contractor if desired.	Non-profit or local government but volunteers welcome if approved by landowner.	Grant recipient (not individual landowner)
Vegetation specifications	Similar to CREP. Native, conifer-focused, 630-680 plants per acre.	Native. 30% must be conifers, also a required "shrub component."	Native with a focus on conifers. Typically ~500 stems per acre to improve success.	Similar to CREP. Native, conifer focused. Hedgerows and shrubs usually don't score as well in the grant process. Increased density allowed for specific purpose (e.g., shade out invasives).
Maintenance responsibility	County provides active maintenance for 3 years. After that, maintenance is landowner's responsibility.	Landowner's responsibility. Can hire a contractor if desired. Mid-contract management: CD observes site and makes recommendations to improve tree growth.	Local sponsor's responsibility to manage and maintain restoration projects as improved salmon habitat for 3 to 8 years after construction is completed.	Ecology requires that all funds are expended within 2-3 years and doesn't allow funding to be held "in reserve" to pay for future maintenance. All maintenance is the

[1] As of April 2022.

		Years 6-7 for 10-year contract Years 7-8 for 15-year contract		responsibility of the landowner. Ecology is trying to find a way to continue to provide ongoing maintenance in the future.
Time until finished planting	Depending on the site. Typically 18 months from grant award.	Sign contract Oct 2022 start, trees in ground by spring 2023 (about 6 months).		About 2 years (in terms of funding), maintenance needed beyond this time frame.
Program contact	Emily Derenne (360) 416-1449 emilyjd@co.skagit.wa.us nrsp@co.skagit.wa.us	Joe Holtcamp, SCD (360) 428-4313 x1020 joe@skagitcd.org	Skagit Fisheries Enhancement Group (360) 336-0172 Skagit Land Trust (360) 428-7878 Skagit River System Cooperative (360) 391-7405 Skagit County (Emily Derenne) (360) 416-1449	Eliza Keely-Arnold ekee461@ecy.wa.gov
Other info	Applications on page 3 of this document. Skagit County has flexibility. NRSP has certain requirements, but there is also funding for restoration and stewardship projects that don't meet NRSP guidelines.	Can set up CD Resource Specialist visit with no-obligation site assessment. Enrolling in CREP doesn't require the landowner to plant anything or sign an agreement. Project planning and approval can take several months, landowner can withdraw during that time. Fact sheet and map of eligible stream segments available here.		Application window for annual funding cycle typically Aug-Oct. All applications for funding are scored on a statewide, competitive basis. Riparian buffers, larger projects, and committed landowners are among the proposal elements that score well in the application process.

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