

FLOODPLAINS BY DESIGN: ***TOWARD A NEW PARADIGM***

Integrated Floodplain Management Status Report

June 2018



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CONTENTS

Floodplains by Design: <i>Toward a New Paradigm</i>	1
1 Introduction	1
1.1 What is Floodplains by Design?	1
1.2 Floodplains by Design Vision	2
1.3 Purpose of this report	2
1.4 Relationship to Floodplain Implementation Strategy	2
1.5 Relationship Between Local and Regional Work	2
1.6 Report Organization	3
2 Floodplains by Design Effort Update	3
3 Large Capital Project Implementation	5
3.1 Accelerating Projects Group	5
3.2 Key Barriers to Project Implementation	5
3.3 Recommended Actions and Steps to Address Barriers	6
4 Integrated Management	6
4.1 Overall Status of Integrated Management across Puget Sound Watersheds	9
4.1.1 Overview of Status	9
4.1.2 2018 Salish Sea Conference	12
4.2 Case Study: Nooksack	13
4.3 Case Study: Puyallup	15
4.4 Case Study: Sustainable Lands Strategy (Snohomish and Stillaguamish)	19
4.5 Case Study: Snohomish	20
4.6 Case Study: Stillaguamish	22
5 Lessons Learned	24
5.1 Lessons Learned About the Interaction Between Regional and Local Work	24
5.2 Lessons Learned About Local Integration	26
6 Resources Needed and Recommendations	28
6.1 Resources Needed	28
6.2 Recommendations to Advance Integrated Floodplain Management at the Watershed Level ..	29
Appendix A – Local Stories	1

1 INTRODUCTION

1.1 WHAT IS FLOODPLAINS BY DESIGN?

Floodplains by Design (FbD) is an ambitious public-private partnership focused on integrating and accelerating efforts to reduce flood risks and restore habitat across Washington State’s major river corridors. By working together, we can align state and federal investments with locally-driven solutions that solve multiple floodplain management challenges and create a more sustainable future for people and nature. The partnership’s goal is to improve the resiliency of these floodplains for the protection of human communities and the health of the ecosystem, while supporting values important in the region such as agriculture, clean water, a vibrant economy and outdoor recreation.

The term “floodplains *by design*” is meant to evoke a floodplain management approach in which we move past an era of unintended consequences and siloed management efforts, toward a holistic, collaborative model that maximizes benefits and reduces costs to people and nature while enabling continued learning and improvement. We want floodplains across Washington State to be places where both people and nature thrive. Today, across state watersheds, there are intersecting water, flood, and fish issues that need to be solved, and limited resources to do so. Floodplain management practices have not kept pace with scientific advances nor evolving public priorities. The result is that flood risks continue to increase while environmental health continues to decline. In some places, there are projects underway to address one issue that may inadvertently make things worse for another set of interests. There are also untapped opportunities for working proactively to prevent the emergence of new problems and to protect our communities, livelihoods, and resources.

Integrated floodplain management holds promise for addressing current challenges and seizing new opportunities, allowing progress to be made while providing a superior return on financial investments. Integrated floodplain management means using collaborative, integrated processes and practices that cut across silos and bring diverse interests together to come up with a path forward that can achieve multiple benefits. Those multiple benefits can include:

- Reduced flood risks for communities and commerce.
- Healthy habitats for fish.
- Resilient communities and ecosystems.
- Minimized flood damage.
- Productive, viable agriculture.
- Sustainable development.
- Jobs and sustainable livelihoods.
- Sustainable supply of water.
- Recreation and other opportunities to connect people and nature.

1.2 FLOODPLAINS BY DESIGN VISION

We envision a future in which collaboration based on shared values has transformed Washington's floodplains to reduce flood damages, increase salmon runs, and preserve vibrant farms and open spaces that enrich our lives and create a resilient future.

1.3 PURPOSE OF THIS REPORT

The purpose of this report is to provide a summary of progress of integrated floodplain management in Puget Sound watersheds. The report serves as an update to the more extensive 2016 report: *Vision, Strategies and Actions for Puget Sound Major River Floodplains*. This report highlights changes that have happened since 2016 and the critical next steps and needs to advance integrated floodplain management. This report is separate from but coordinated with the 5-Year Strategy for Washington Floodplains report, which is aimed at transitioning FbD from a start-up initiative into a stable, ongoing state program and partnership.

1.4 RELATIONSHIP TO FLOODPLAIN IMPLEMENTATION STRATEGY

The Floodplain Implementation Strategy was adopted by the Puget Sound Partnership in 2016. The Floodplain Implementation Strategy includes four approaches:

- Incorporate risk tolerance in planning for future infrastructure and population growth
- Develop a cost subsidies analysis for development in floodplain areas
- Implement Regional Floodplains by Design strategy:
 - Advance regional agreement on integrated vision, goals and actions
 - Build political support for increased investment
 - Focus investment and reduce administrative cost and delays
 - Increase organizational resilience and adaptively manage floodplain partnerships
- Encourage integrated corridor project implementation (all floodplain areas) that increases floodplain connectivity, improves agriculture operations and viability, and increases the flood resilience of communities

This report summarizes progress made toward the third and fourth approaches – implementing the regional Floodplains by Design strategy and encouraging integrated corridor project implementation.

1.5 RELATIONSHIP BETWEEN LOCAL AND REGIONAL WORK

Over the past five years, the work of the Floodplains by Design initiative has focused on both regional and local integration and the inextricable link between the two. As much as local integration of floodplain interests is needed to achieve the Floodplains by Design vision, regional integration is also needed to create the context and enabling factors for local integration to succeed. This involves integration of state and federal regulations, permitting processes, incentives, and funding programs. In addition, regional support can be key to both sparking and maintaining local integrated floodplain management. At the same time, local work informs regional work, identifying the key issues in integrated floodplain management that can only be addressed at the regional level. One recent example of regional and local integration was an Acquisition Workshop hosted by the Federal Task Force

in January 2018. The workshop was convened because local practitioners across the state kept highlighting factors around acquisition that were limiting the success of their programs, stymying their pace of progress, and wasting precious staff and financial resources. At the workshop, federal and local practitioners discussed issues with property acquisition, and the conversations led to a report with concrete recommendations. The workshop and report bridged silos, called upon regional leaders to solve problems, and expanded the understanding of useful tactics being deployed across the region across local staff from different areas. More information on these connections is included in Section 4 (Lessons Learned).

1.6 REPORT ORGANIZATION

This report includes the following sections:

- Section 1 (Introduction) includes information on the Floodplains by Design initiative and its vision, the purpose of this report, the relationship to the Floodplain Implementation Strategy, and the relationship between local and regional work.
- Section 2 (Floodplains by Design Effort Update) summarizes the last two years of work at the regional level to support local integrated floodplain management.
- Section 3 (Large Capital Project Implementation) highlights the efforts of the Accelerating Projects Group, including identification of key barriers to project implementation and recommended actions and next steps.
- Section 4 (Integrated Management) includes two infographics designed to highlight key aspects of integrated floodplain management – one showing the ten elements of integration and the other showing the cyclical but expanding nature of integrated floodplain management. Section 4 also includes an overall status update of integrated floodplain management in Puget Sound and Washington State and updates on four watersheds: Nooksack, Puyallup, Snohomish, and Stillaguamish.
- Section 5 (Lessons Learned) summarizes key lessons learned identified by the Floodplains by Design team over the past five years.
- Section 6 (Resources Needed and Recommendations) summarizes available information about the resources needed to implement integrated floodplain management at the local scale as well as recommendations to advance local integrated floodplain management.
- Appendix A includes stories developed by local practitioners as part of a recent storytelling workshop conducted by TNC. The stories were shared at the regional Floodplains by Design workshop on May 30, 2018.

2 FLOODPLAINS BY DESIGN EFFORT UPDATE

Over the past two years, the Floodplains by Design Partnership has continued to advance efforts to incentivize and support locally driven integrated floodplain management. These efforts have included the continuation of the Floodplains by Design grant program, regional workshops, skill building training on storytelling, cross-watershed discussions about integrating agriculture, strategic support given to

local integrated groups, and support to project sponsors. An additional effort, the facilitation of the Accelerating Projects Group, is discussed in detail in Section 3.

The 2017 Washington State Capital Budget, passed in January 2018, included \$35.4 million of funding for the Floodplains by Design program, which will fund seven projects around the state. Ecology is currently conducting the application round for the 2019 Capital Budget. Project proponents submitted 29 projects totaling \$99 million for the pre-application round, showing that there continues to be high demand for funding for integrated floodplain management. Twenty-two projects have been invited to submit full proposals. The Floodplains by Design grant program accelerates integrated management at the local level because it provides an incentive to further pursue integration to be eligible for funding. The grant program is also a unique funding source for integrated actions that may fall between the cracks of other funding programs.

The Floodplains by Design partnership hosted large regional workshops in September 2016, June 2017, December 2017, and May 2018. Each workshop, attended by over 150 people, provided an opportunity for information exchange between local and regional partners. In addition, TNC hosted a smaller storytelling workshop in April 2018 that allowed 20 local practitioners, who participated as cohorts from eight regions across the state, to receive training on how to craft and share compelling stories about their local integrated floodplain management work. These stories can be found in Appendix A.

Over the past two years, a number of efforts to better understand the needs of agricultural communities and to integrate those needs into integrated floodplain management efforts have been advancing around Puget Sound. While all of these efforts are aligned with the Floodplains by Design vision and intent, many have been funded by sources other than Floodplains by Design and are not associated with the Floodplains by Design initiative. Examples of these efforts include a multi-interest farm, fish, and flood alternatives analysis in the Skagit Watershed, the Snohomish Agricultural Resilience Plan, the Farming in the Floodplain Project in the Puyallup Watershed, and integrated flood planning in the Nooksack Watershed. In January 2018, project managers for these four efforts and representatives of the regional Floodplains by Design effort met in Everett to share what they have been doing and what they have learned. This meeting represented an advancement in cross-discussion and information sharing on agricultural integration as well as an opportunity for local practitioners to inform regional practitioners about their needs and successes.

The Floodplains by Design partnership has also provided direct support to local practitioners and developed guidance documents over the past two years. The FbD partnership provided direct support and outreach in the Puyallup, Nooksack, Stillaguamish, and Snohomish watersheds to provide additional capacity and advance local integrated floodplain management. This investment at the local level provides invaluable feedback back to the regional leadership about local needs. The partnership also provided direct support to project sponsors across the Puget Sound region to help them develop strong proposals for the FbD grant program and more strategically implement current funding. In 2018, TNC developed a document providing guidance on how to incorporate climate change into FbD projects. Guidance on the elements of integrated floodplain management has also been developed, described below in Section 4.

3 LARGE CAPITAL PROJECT IMPLEMENTATION

3.1 ACCELERATING PROJECTS GROUP

Over the course of 2017, The Nature Conservancy convened a group of floodplain project managers to discuss strategies to accelerate the pace of implementing multiple-benefit floodplain projects. The purpose of the group was to find ways to address barriers to project implementation and to help identify next steps to address these barriers. The work of this group contributed to planning a session on accelerating projects at the June 2017 Floodplains by Design workshop, and fed into plans for an acquisition barriers workshop and to investigate potential changes to several permit processes. The group included floodplain project managers for counties, cities, tribes, and state agencies; consultants who design and implement floodplain projects; and members of the Floodplains by Design team. The group met six times, including the session at the June 2017 workshop. One of the recommended actions in the 5-Year Strategy for Washington Floodplains is to continue convening the Accelerating Projects Group. Information in Sections 3.2 and 3.3 below were developed with the Accelerating Projects Group.

3.2 KEY BARRIERS TO PROJECT IMPLEMENTATION

The Accelerating Projects Group identified a range of barriers to project implementation, but focused on four key barriers: regulations and permitting; property acquisition; coordination of grants; and long-term stewardship.

Regulations and permitting can increase project costs and delay the project schedule. Floodplain project managers feel that coordination between local, state, and federal permitting programs is lacking. In general, regulations are designed to keep the system as is and are not well suited to understanding projects that improve the system. Participants identified permitting barriers associated with the Corps, Ecology, DNR, and local planning departments.

Project managers deal with a variety of issues when working on property acquisition for projects. Key issues mentioned by floodplain project managers include the requirement to purchase properties at a fair market value; the lack of flexibility in funding sources; and the lack of local capacity to complete complex acquisitions. Floodplain project managers also discussed difficulties that arise from not having the ability to acquire property using eminent domain when using certain funding sources. Requiring voluntary acquisition for a project where the property will eventually need to be acquired can create unfair situations for property owners as property values fall.

Coordination of grants can be a substantial burden on floodplain project managers. Each grant source has different processes and timelines and can require project managers to track different metrics. For large projects requiring multiple sources of funding, it takes significant capacity to apply for and negotiate grants, to account for and report on funding for each source, and to communicate progress and changes with funders. Project managers need time to gather local support for grant applications and to build and hold together coalitions for integrated projects. It is difficult to work projects into the timelines of when grant funding starts and when it needs to end. Project setbacks can have budget and timeline implications that are amplified by grant funding timeline restrictions.

Long-term stewardship can also be a barrier to project implementation. Many local project sponsors find it difficult to fund ongoing maintenance and stewardship of completed projects. Organizations that aren't flood focused and don't have O&M revenues can be particularly limited in their ability to do these projects. Some agencies are reluctant to increase the footprint of lands they own without additional stewardship funding. Invasive species and homeless encampments can pose particular problems for long-term stewardship.

3.3 RECOMMENDED ACTIONS AND STEPS TO ADDRESS BARRIERS

Washington State has a grant coordination group for aligning salmon and water quality grant and loan programs. Continued work by the grant coordination group (Aligning Salmon and Water Quality Grant and Loan Programs) will address barriers related to coordination of grants. In January 2018, the Federal Task Force convened a workshop on property acquisition, which identified a range of actions to address barriers to property acquisition and to long-term stewardship. The Federal Task Force will be convening stakeholders to follow up on actions identified in the workshop. It is recommended that the Floodplains by Design partnership coordinate with and help advance both of these efforts.

In addition, the Accelerating Projects Group developed a recommendation to examine three parts of the permitting process (fish windows, water quality certifications, and the Joint Aquatic Resource Permit Application (JARPA) process) to document difficulties with the permitting process, the impact of the regulations on floodplain restoration projects, the best science in support of protecting ecosystem functions, and potential policy changes. This recommended process would also involve building support from diverse interests to affect the recommended policy changes. This recommendation is included as an action in the 5-Year Strategy for Washington Floodplains. Additional work is needed in the future to explore potential improvements to other permitting processes, such as those managed by the Corps of Engineers, and to identify detailed next steps.

4 INTEGRATED MANAGEMENT

At its core, Floodplains by Design is a vision for integrated management. Over the last two years, as funding in the early years hit the ground and staff began moving concepts of integration forward in significant ways, additional work trying to define and explain what integrated management began. So, in 2018, the Floodplains by Design team developed an initial draft set of ten elements of integration that staff felt should be considered in integrated floodplain management processes at the local scale. Not all local areas will be making progress on each element, and various elements will be at different levels of sophistication and depth at different times. The elements are somewhat limited as a stand-alone document as they are a static representation of a complex and interconnected process. Nevertheless, the Floodplains by Design team believes beginning to share the set of elements more broadly can help local practitioners assess their efforts to integrate and identify helpful next steps as they move toward increasingly integrated floodplain management.

Figure 1 shows the ten elements of integration with bullet points characterizing less robust to more robust efforts for each element. While the bullet points within an element progress from less robust to more robust, the overall effort to integrate is more complex. Increasing robustness in one element may

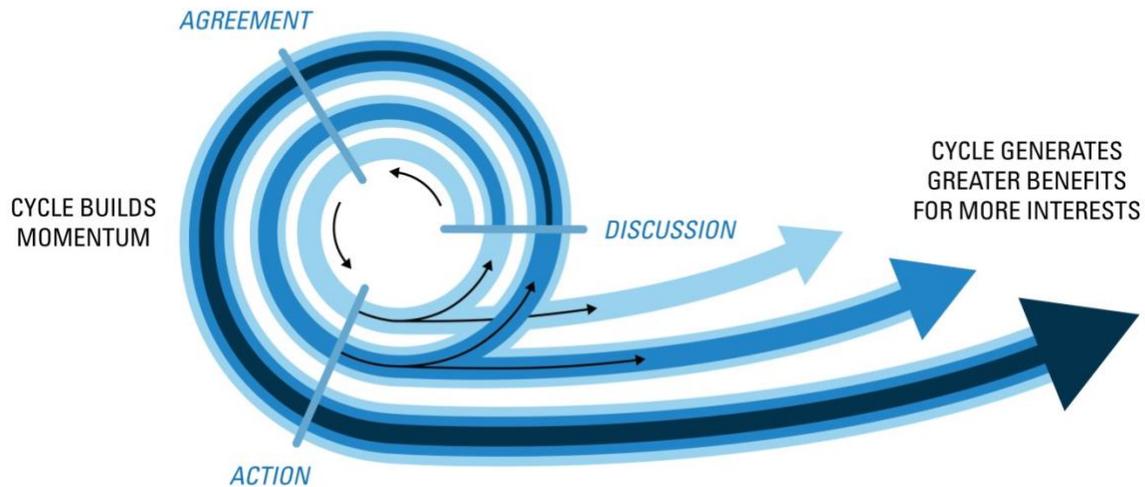
reduce the robustness of another, which can be a sign of increased overall robustness. For instance, a small group of people can have a very robust set of goals. As the group expands, which is important for integration, then the concurrence on the goals will naturally become less robust in the short term. However, this “regression” in goals is actually a sign of overall progression of the effort.

This infographic was developed based on experience working with local watersheds in the process of advancing integrated floodplain management. The ten elements of integration are intended to be a tool for local practitioners to identify the next best step for integration in their area. It is not intended to be used by regional practitioners to “score” the integrated floodplain management efforts of a local watershed because, as noted above, the assessment of where the area is in the overall process of integration may be challenging to discern from just assessing the status within each box. Integrated floodplain management is complex and nonlinear, as shown in Figure 2, the cycle of integrated floodplain management. While Figure 2 illustrates the cycle for an overall integration effort, it can also be applied to each element of integration in Figure 1. Therefore, the current status of any given element in a watershed is not as important as the overall effort to continue balancing and advancing the next best step in that watershed. The case studies and overview of integrated management attempt to provide insight into where the Floodplains by Design effort is cognizant of the elements in Figure 1 and the cyclical and evolving nature of the work in complexity and depth of application.

How Integrated is our Floodplain Management?

 <p>SHARED VISION</p> <ul style="list-style-type: none"> + No shared vision or very general shared vision ++ Multi-interest shared vision not yet tightly linked to actions +++ Multi-interest shared vision directly linked to actions 	 <p>GOALS</p> <ul style="list-style-type: none"> + Some interests have clearly articulated needs and goals, others may not ++ All interests have needs and goals that are known by other interests +++ All interests have needs and goals that are integrated and actively shared 	 <p>INSTITUTIONAL STRUCTURES</p> <ul style="list-style-type: none"> + Collaborative efforts are unstructured and ad-hoc ++ Efforts are staffed, structures are clear, and decision-making is defined +++ Collaboration is institutionalized with organizational support 	 <p>COLLABORATION</p> <ul style="list-style-type: none"> + Collaboration may result in mutual support for individual actions ++ Mutual support for actions coordinated on the landscape +++ Multi-benefit and individual interest actions coordinated on landscape 	 <p>PARTICIPANTS</p> <ul style="list-style-type: none"> + Actions are defined by one or two agencies with multiple interests in mind ++ A variety of stakeholders are at the table and participating +++ All people affected by the decision are participating
 <p>TECHNICAL STUDIES</p> <ul style="list-style-type: none"> + No understanding of the river system dynamics ++ Technical studies have been done but don't yet lead to integrated and prioritized actions +++ Technical studies have led to integrated actions and sequencing 	 <p>ACTIONS</p> <ul style="list-style-type: none"> + Package of site-specific individual interest actions; may or may not conflict ++ Package of individual interest actions that don't conflict +++ Package of single interest and multi-benefit actions that don't conflict 	 <p>SCALE</p> <ul style="list-style-type: none"> + Actions are coordinated at the site-scale only, at one or more discrete sites ++ Actions are coordinated at a large-site or small-reach scale +++ Actions are coordinated at a reach or watershed scale 	 <p>CLIMATE IMPACTS</p> <ul style="list-style-type: none"> + Watershed-specific climate impacts are not understood or addressed ++ Climate impacts may be addressed in individual project designs +++ Climate projections addressed through location, sequence, and design of durable projects 	 <p>MEASURING SUCCESS</p> <ul style="list-style-type: none"> + No tracking in place to assess change over time ++ Limited ability to measure success within certain interests, actions, or reaches +++ Sophisticated ability to measure success across landscape

The Cycle of Integrated Management Building Toward Greater Achievement



4.1 OVERALL STATUS OF INTEGRATED MANAGEMENT ACROSS PUGET SOUND WATERSHEDS.

4.1.1 Overview of Status Floodplain Management

Watersheds across Washington State struggle with the legacy impacts of past river management actions – dredging channels, straightening rivers, and armoring and leveeing rivers banks. These actions allowed the development of cities, homes, businesses, and agriculture in floodplain areas, but they also degraded habitat and have not eliminated the threat from floods. Local floodplain managers are left with expensive levee maintenance costs, high flood risk, and a system of policies and regulations at the state and federal level that conflict and don't always incentivize improvements to the system now known to be necessary and helpful.

At the same time, other community concerns have started to overlap with flood risk issues. Agriculture in many areas is in decline as cities, homes, transportation projects, and warehouses expand and floodplain hydrology changes. The combined changes of development and hydrology affect agriculture through increased flood risk, changing groundwater, and impaired drainage on agriculture lands that leaves fields too wet. Meanwhile, Chinook, bull trout, and steelhead have all been listed under the Endangered Species Act. Other salmon populations, like Coho, are struggling as well. Yet, despite hundreds of millions of dollars spent on salmon habitat improvements, the system-wide legacy impacts of flood control actions are still harming salmon and investments aren't at the scale needed for salmon recovery. Long-held tensions between farmers and salmon advocates still exist as farmers feel threatened not just by development but also by habitat restoration projects. Salmon advocates have

grown more desperate year by year as populations teeter on the edge of extinction and recovery efforts feel too small and slow to be meaningful. However, frustration and hope have combined to drive many watersheds in the state to explore a different approach to floodplain management.

Integrated Floodplain Management across Washington State

Many areas across Puget Sound and Washington State are now working on implementing a combination of nature-based solutions and other agreed upon solutions that create benefits at a meaningful scale and timeframe to farm communities, salmon recovery advocates, and flood risk reduction efforts as well as other community values. Nature-based solutions are those that largely revolve around giving the river more room in order to support fish habitat, increase flood storage capacity, and reduce damage. These combined strategies and projects are aimed at redesigning floodplains for multiple uses and benefits to maximize public and private investments.

In 2015, the Floodplains by Design team worked with local partners to develop Floodplain Vision documents describing reach-scale strategies. Through this effort, we identified that there is strong local interest in integration of floodplain management. Local leaders and partners in many watersheds have significant aspirations for improving the conditions of their floodplains for people and nature. At that time, nine watersheds developed Floodplain Vision documents, showing that they were in some stage of building or sustaining agreement around integrated floodplain goals and/or a tangible set of actions. However, only a few areas had specific agreements on the suites of actions or costs to achieve their local visions and strategies.

After five years of Floodplains by Design grants being implemented, regional and local leaders have gotten clearer about what integrated floodplain management looks like, the results it can produce, and what is necessary for success. These advancements are noted in other parts of the report, which includes a new infographic describes elements of Integrated Management (Section 4), lessons learned (Section 5), and recommendations to guide future actions and decision-making (Section 6).

Results

The adoption of integrated floodplain management across Washington State has shown results in both increased collaboration and on-the-ground action. One of the greatest advancements is that, in most watersheds, fish and flood practitioners now know each other, and both are increasingly aware of what farmers and the farm community need, want, and fear. While this growing interconnectivity is itself important, perhaps even more important is the growing awareness of how much isn't known about other partners or interests. Increasingly, there is a growing desire to truly listen to and learn from others and to shape a solution that no one in the room could have developed on their own.

As of 2016, the Floodplains by Design grant program had funded projects in 12 counties across Washington State, including 29 projects in 10 major floodplains. On-the-ground work included 5 miles of new state-of-the-art levees built for flood protection, 430 residences removed from high risk floodplain areas, natural processes restored on 10 miles of rivers, over 1000 acres of floodplain reconnected, and 500 acres of prime agricultural lands protected for long-term agricultural use. While a tally of results from 2016-2018 is not yet available, Floodplains by Design funding has continued to spark on-the-ground actions to improve Washington State's floodplains.

For the 2019-2021 fiscal year, 22 organizations from across the State were invited to submit full proposals to the [Floodplains by Design grant program](#). Local organizations that submitted proposals include cities, counties, tribes, Conservation Districts and other organizations. While the total need for investment still far outpaces the available funding, the Floodplains by Design grant program has supplied \$115 million for local projects since 2013. FbD dollars combine with a multitude of other funding sources (such as Puget Sound Acquisition and Restoration, Salmon Recovery Funding Board, NOAA Coastal Resiliency, NOAA Community-Based Restoration, Estuary Salmon and Restoration Program, Flood Control Zone District, FEMA, local Conservation Futures, and others) to deliver larger and more beneficial local results. These results can be part of a single footprint project or a variety of projects that combine results along a reach.

Outside of the grant program, the regional Floodplains by Design effort actively engages many governments and interests within floodplain areas across the state. Regional workshops draw representatives from across Washington State. Continued and building interest in integrated management and Floodplains by Design was demonstrated by the recent storytelling workshop where cohorts of two to three people came from eight different parts of the state to spend two days learning how to create compelling stories and then telling them to an audience of 150 people. The stories provided insights into the challenges faced by those working to advance integration locally and captured the tangible and on-the-ground results of perseverance, skill, empathy, and vision. These stories also highlighted and reinforced how the integrated management elements noted in Section 3 of this report actually look in the real world. Some of the workshop stories can be found in Appendix A.

Challenges

While challenges are generally specific to the physical conditions, needs, and stakeholders in a given watershed, there are some consistent challenges across watersheds. Some of the most common and difficult challenges include lack of local political support, lack of regional incentives that encourage integrated floodplain management in the face of legacy disincentives, and insufficient skills and capacity to conduct integrated floodplain management. Section 5 (Lessons Learned) of this report describes these and other challenges that local practitioners face in implementing integrated floodplain management. Appendix A includes stories about integrated floodplain management developed by local practitioners. Some of the challenges addressed in the stories include local resistance to property acquisition, legacy impacts from past development and floodplain management decisions, lack of skills for engaging the agricultural community, the disruption caused by major flood events, the difficulty and complexity of integrated floodplain management, and lack of funding for carrying out identified actions.

Next Steps

Because integrated floodplain management efforts depend entirely on the specific physical conditions, challenges, and interests in a given watershed, the next steps for each watershed vary wildly. For many watersheds, successful completion of a current (2017-2019) or upcoming (2019-2021) Floodplains by Design grant is a key next step in integrated floodplain management. For other watersheds, more programmatic next steps (such as convening stakeholders, conducting an overall planning process, or developing more information on existing conditions) may be needed. Section 6.2 of this report lists recommendations for local practitioners that can help identify next steps.

4.1.2 2018 Salish Sea Conference

At the Salish Sea Conference in Seattle in April 2018, the FbD partnership chaired a session titled Building Resilient Floodplains through Regional Policy, Community-driven Solutions and Science: The Story of Integrated Floodplain Management. The session showed how Integrated Floodplain Management weaves together the art and science of floodplain management, highlighting actions taken that support integrated planning and monitoring at the regional, watershed and reach scales, improved coordination at the federal and state levels, and how to integrate climate change impacts into floodplain management. Presentations in the session included:

- Jenny Baker (TNC) presented on the measured outcomes for fish, farms, and flooding achieved by the Fisher Slough project.
- Julie Morse (TNC) presented a summary of the achievements of the first five years of the Floodplains by Design initiative and key strategies for the next five years.
- Paul Cereghino (NOAA) presented information on how agency silos affect a subwatershed of the Snohomish River, the French Slough area.
- Guillaume Mauger (University of Washington Climate Impacts Group) presented the approach to and outcomes of an effort to integrate climate change information into floodplain management across various floodplain agencies as part of the Corps of Engineers Silver Jackets program.
- Kit Crump (Snohomish County) presented on the Sustainable Lands Strategy efforts to develop integrated reach-scale plans for floodplains in the Snohomish Watershed.
- Ilon Logan (Environmental Science Associates) presented information on the shared monitoring plan for Puyallup Watershed floodplains.

Another Salish Sea session focused on Understanding What Matters to Agricultural Producers. One third of Puget Sound is in agriculture use and understanding the values and needs of agriculture is key to integrating agriculture into multiple-benefit planning for Puget Sound's floodplain areas. Some key themes that emerged from the presentations in this session:

- It is important to show visible progress and commitment to addressing agricultural concerns, including regulatory concerns.
- Agriculture engagement needs to include the diverse voices of the agriculture community and identify the challenges and potential solutions through eyes of producers.
- Challenges discussed in the session included growth and development in relation to upland flooding, the importance of agricultural land preservation and protection, the effects of climate change, the value of local sustainable food and farm culture, and flood risk.
- Compensate farmers for participation and engagement in integrated planning processes because they are taking time away from their businesses to participate.
- Identify which sources of information, individuals, and organizations are trusted by farmers. Use those sources of information to inform your work and collaborate with those individuals and organizations so you can increase your understanding of agricultural needs.
- Multiple-benefit projects must ensure that farms in and adjacent to the project area are still economically viable.

Nooksack Integrated Floodplain Management Highlights

- Developing **shared vision, goals** and strategies through the Floodplain Integrated Planning (FLIP process) to reduce flood risk and support salmon recovery and the farm community.
- **Broad participation** in FLIP meetings: farmers, representatives from the Watershed Improvement Districts, the Lummi and Nooksack Tribes and Whatcom County.
- Whatcom County formed a **steering committee** for the FLIP that includes representatives of the Nooksack Tribe, Lummi Nation, Flood Control Zone District, County Salmon Recovery staff and a funded farm representative.
- The FLIP process is making significant investments in **technical information**, including an integrated geomorphic study and a habitat assessment
- The FLIP process has led to increased and broader support for the submission of a FbD grant proposal and associated **actions**, after previous proposals were pulled (once by County leadership and once by State Legislators).

- Flexibility is key. Projects, planning efforts, and funding need the flexibility for practitioners to listen to farmers' concerns and shift course to address those concerns.
- It's important to value the contribution of farms and farmers - to stewardship of the land, to preventing development in floodplain areas, and to food security.
- It helps to focus on bigger goals (such as agricultural viability) than on specific projects that farmers may oppose.

4.2 CASE STUDY: NOOKSACK

Floodplain Management in the Nooksack Watershed

The Nooksack River flows through agricultural farms and dairies, two tribal reservations, and numerous small cities on its way to Puget Sound. The Nooksack River is one of the only rivers in Puget Sound with levees designed to overtop at fairly low flows, allowing floodwaters to travel across adjacent lands, which are often farmlands, before re-entering the river. The farmers and farms are adapted to these flows as long as they don't come too early in the fall or too late in the spring. Levee elevations are carefully set and managed to get this balance right. The salmon, however, haven't adapted as well to swimming through farmlands instead of wetlands. Many fish become stranded, and habitat below the confluence of the North and South Forks of the Nooksack has been dramatically reduced over the last hundred and fifty years due to construction of the levees, loss of wood and other changes. Habitat above the confluence in the forks is also degraded significantly, affecting spawning and rearing.

The Nooksack River presents complex challenges for floodplain management due to the risk of avulsion and erosion, perched channels, changing timing and volume of flows, and aggradation, to name a few. The Nooksack and the much larger Fraser River to the north in Canada have shifted their courses over geologic time and there are concerns, planned for and considered, that the Nooksack could again flood or avulse and flood north over the border with Canada. The Nooksack has also historically shifted between Bellingham Bay and Lummi Bay. Downstream of the historic old river path to Canada, referred to as the Everson Overflow, the path of the Nooksack River is relatively recent in terms of geologic time, and the river is naturally perched in one

reach with a floodplain that sits lower than the natural riverbank. The Nooksack delta is also aggrading at a rapid pace, with 1.5 square miles of land added to the delta since the late 1800s.

Integrated Floodplain Management in the Nooksack Watershed

Whatcom County adopted a Comprehensive Flood Hazard Management Plan (CFHMP) for the Lower Nooksack in 1999. The 1999 plan was focused on flood risk reduction but acknowledged that better integration with salmon recovery was a necessary step, as was additional planning for upstream areas of the watershed (the North and South Forks of the Nooksack). Then in 2005 as a response to the listing of Chinook under the Endangered Species Act, WRIA 1 developed a salmon recovery plan, which again highlighted an early action to “Integrate salmon recovery needs into floodplain management planning.” More recently, the U.S. Army Corps of Engineers (Corps) identified 80 “deficiencies” in Whatcom County’s levees. If these deficiencies weren’t addressed, the levees could be withdrawn from the PL 84-99 program, which provides federal funding for levee repair after a flood. To respond to this issue, Whatcom County started a System-Wide Improvement Framework (SWIF) process. The original intent of the Corps’ SWIF process was to create a process for “when additional time and coordination are needed to consider complex, endangered species habitat or Native American concerns while meeting requirements for levee safety.” However, while the SWIF process was intended to support multiple objective projects, the USACE’s authority under the PL 84-99 program limits their ability to help local sponsors implement projects identified in the SWIF. This restricted the ability of the effort to integrate salmon recovery with flood management in most circumstances. Nevertheless, while the SWIF process ended up primarily focused on addressing flood issues, it did build critical relationships between regulators, tribes, and the farming community and resulted in technical work and a few projects that have laid the foundation for more integrated projects in the future. It was recognized during the SWIF effort that a broader and more integrated process was needed. This led to the current process to update the 1999 Flood Plan with a Floodplain Integrated Planning (FLIP) process. This effort seeks to develop goals, strategies and actions to reduce flood risk and support salmon recovery and the farm community.

Results

Currently, Whatcom County is leading an effort to develop a new integrated Comprehensive Flood Hazard Management Plan which they have renamed FLIP. The Nooksack Watershed has urban/rural and citizen/government tensions and at times has become polarized around issues that relate to a variety of natural resources issues like gravel removal, water rights, salmon fishing and harvest, salmon recovery projects, property rights and protection from erosion and flooding. Historic tensions have been such that local support to even run an integrated floodplain management planning process is a critical step in and of itself. Over 50 people are attending FLIP meetings, including a large number of farmers and representatives from the Watershed Improvement Districts. Both the Nooksack and Lummi Tribes are also participating through staff engagement. This broad participation is an encouraging sign for integration in the watershed. The FLIP process has included the first ever meeting between farmers and salmon recovery staff, which helped farmers understand salmon recovery issues and concerns, ask questions, build relationships, and express key concerns for the farming community. The County has formed a Steering Committee that includes representatives of tribes, the Flood Control Zone District, County salmon recovery staff, and a dedicated and funded farm community representative. The Steering Committee meets regularly to lead the FLIP effort and to integrate their various viewpoints,

needs, and efforts. The process is making significant investments in technical information, including an integrated geomorphic study and a habitat assessment. In addition to technical studies, the process is investing in collaboration, partnership, and institutionalization, all of which advance integration efforts. The process has led to increased and broader support for the submission of a Floodplains by Design grant proposal, after previous proposals were pulled (once by County leadership and once by State Legislators).

Challenges

The County is still in the early stages of the FLIP process and there are continued questions about the scope of the work. For example, to what extent will the plan include the three forks of the Nooksack River? Many levees in the watershed are still enrolled in the Corps' PL 84-99 program, which drives funding and work toward single-interest flood solutions. How will the community choose to move forward when outside funding may go against needs or agreements of other local partners? The Nooksack is a unique and complex river system with specific flood management issues. Specific issues include glacier retreat, sediment loads and climate change, which is causing sea level rise and changing the timing and volume of stream flows. There are also significant collaboration issues that will need to be addressed in the FLIP process, including caution around trust, different world views, and complex local government politics. Key stakeholders face intense pressures, these include the impact of extremely low fish populations on tribal fishing and cultural expression, the various negative pressures on the farming industry and flood risk. The FLIP process is designed to help address these issues, but it will be a substantial task over the next several years.

Next Steps

The FLIP process is working to develop locally agreed-upon multi-benefit reach scale goals, strategies, and actions for the Nooksack River. In addition, FLIP partners are submitting a Floodplains by Design grant application that would advance local projects and fund exploration of a multi-benefit early action project that would benefit farms, fish, and flood risk reduction in new and creative ways. If conducted well, these early projects could significantly build relationships and trust creating a foundation for the larger reach efforts.

4.3 CASE STUDY: PUYALLUP

Floodplain Management in the Puyallup Watershed

The Puyallup River and its two main tributaries, the White and Carbon rivers, flow from Mt. Rainier, through agricultural valleys, numerous small cities, and the Port of Tacoma to Puget Sound. In the early days of Pierce County, the "river improvement" department dredged channels, straightened the river, and armored the banks to protect and advance agriculture. As floods continued to occur, the County shifted to a "flood control" model, building bigger and better levees and lining the river with concrete to provide greater flood protection for the increased development in the floodplain. Even with these measures, flooding remained, and the County and its citizens realized levees would never permanently protect the investments built behind them. In response, the County shifted to a "flood risk management" approach, developing better flood risk maps, putting land use restrictions in some floodplain areas, and purchasing some of the most frequently flooded homes. But people and homes remained threatened and harmed by damaging floods. Levee maintenance costs continued to increase.

- The Puyallup Watershed started to receive FbD grants (totaling \$16.5 million) to build support for a **shared vision, goals and strategies for an integrated floodplain approach**.
- The FbD grants allowed the Puyallup partners to work at **multiple scales**, building a watershed-wide collaboration to tee up future projects while taking action on-the-ground at key project sites.
- Pierce County **institutionalized the multi-benefit approach** and became the first County to hire a staff position to support the work of the newly formed Floodplains for the Future collaboration.
- The FFTF program also embarked on a watershed scale **monitoring effort** to set goals, track progress and measure success.
- The **scale of funding is allowing 44 integrated projects** to advance that collectively support flood risk reduction, farming and salmon recovery.

Two other community concerns began to emerge and overlap with the flooding issues. First, agriculture in the County began declining as cities, homes and warehouses expanded into the floodplain overtaking former farming areas, despite the County having some of the best floodplain management regulations in the country. Recently, millions of dollars have been spent on salmon habitat improvements but impacts of the “river improvement” and “flood control” eras were still harming salmon and investments weren’t at a scale likely to recover salmon. A shift in approach was needed.

Integrated Floodplain Management in the Puyallup Watershed

As the County started to plan a way to address the floodplain issues, a multiple-benefit approach started to emerge. The County developed an estimated 400-million-dollar plan of projects and programs to comprehensively address the top flooding risks. Integral to the plan was the County’s commitment to incorporate setback levees as the preferred construction method where ever possible. The County identified set back levees at 22 places in the County, which staff felt would address key flood risk areas, increase flood storage capacity, and improve habitat. But completing projects at this scale and magnitude would require extensive funding as well as both broad and site-specific public support. The County didn’t have either at the level needed. It became clear that more engagement was needed. The Floodplains by Design grant program, with its emphasis on integrated floodplain management and its flexibility, provided a critical incentive to fuel a nascent idea. The County has brought together tribes, agricultural groups, small cities, the Port of Tacoma, and others to both create and implement a transformative package of multiple-benefits projects at a landscape scale.

Results

The Puyallup Watershed started to receive Floodplains by Design grants (around \$9 million in 2013 and \$7.5 million in 2015) to further develop and build support for their grand vision. These grants allowed Puyallup partners to work at two scales, building a watershed-wide collaboration to tee up future projects while taking action on-the-ground at key project sites. With the second Floodplains by Design grant, Pierce County became the first County to hire a staff position to advance an integrated set of capital projects and support the work of the newly formed Floodplains for the Future. Formed in the same timeframe, the collaborative group that came together to submit the grant application formalized and became—Floodplains for the Future (FFTF). The FFTF program also embarked

on a watershed scale monitoring effort to set and track progress toward their goals and specifically to better understand the contribution capital investments were making towards larger needs within farm, fish and flood concerns. This investment in building the collaborative structure, staffing, and relationships to further integration has been critical to advancing a large suite of on-the-ground projects.

The Floodplains by Design grant has helped Pierce County and its partners dramatically accelerate the pace of their capital program and highlighted the importance of dependable funding to ramp up to larger scales. For example, in the first round of the Floodplains by Design funding, the County was able to acquire seven at-risk floodplain properties. In the second round of Floodplains by Design funding, the County acquired 17 properties. The County also learned a lot of lessons as many acquisitions included the demolition of structures, the relocation of several tenants, and site restoration, all of which encountered unexpected situations. Moving so many projects at once rapidly increased staff understanding of contracting, permitting efficiencies, and other ways to successfully operate at scale. These investments also helped leverage other funding, which resulted in 50 total structures being removed from flood risk since 2013.

The FbD funding also supported the development of a pipeline of projects across the watershed, including both multiple-benefit projects and single-purpose projects that together form an integrated package supported by the partners. The scale of consistent funding is allowing the FFTF program to simultaneously advance 44 projects: 22 multiple-benefit projects, 15 salmon-specific projects, 6 agriculture-specific projects, and 1 flood-specific project. The momentum built during the last four years contributed significantly to the agricultural community's ability to secure an additional 7 million dollars from a federal program to conserve easements on agricultural lands in the floodplain. These easements will be acquired consistent with broader FFTF goals. These 44 projects represent the balance of effort important to maintaining support across the diverse partners. Through the monitoring effort, FFTF will be implementing a sophisticated but simple system to track the efforts of its partners in order to best leverage and integrate projects and sustain trust of the partners over time that investments contribute meaningfully to their interest's goals.

Challenges

Dependable funding is critical to helping a watershed achieve results at scale. For instance, as noted above, Floodplains by Design funding allowed Pierce County to more than double its acquisition program over two funding cycles. Nevertheless, the County received feedback from Department of Ecology that their acquisitions were too slow and there was concern about the County's ability to spend its upcoming third round acquisition funding. To be responsive to Ecology's concern and further ramp up the speed of acquisitions, the County hired a right of way consultant, ordered title reports and appraisals on 7 properties and prepared their acquisition program to "hit the ground running" in anticipation of future funding. Then the capital budget was delayed by 8 months. The County had to let the contract with the right of way consultant expire and enough time elapsed that the title reports and appraisals were no longer valid. The title reports and appraisals represent a loss of more than \$40,000 over and above lost costs associated with consultant and staff time. The toll this delay took on the willing sellers and others interested in selling their homes is un-measurable as their trust in the process was broken. They were left wondering when and if funding would indeed become

available. One of the main interests of the Floodplains by Design program is to accelerate the pace of efforts to reduce flood risk and restore habitat. Pierce County's efforts to do this are important to help the region understand what it actually takes at the local scale to do this and how regional factors affect the ability to "ramp up" implementation.

While the FFTF program has leveraged Floodplains by Design grants to accelerate both watershed-scale and site-scale actions, integrated floodplain management still presents many challenges. The FFTF program involves a large stakeholder group, and as efforts moved forward it became clear there was a disparity in the amount of technical information available to support each interest. A watershed-scale monitoring effort revealed issues for further group discussion about the balance of investments across interests, the specificity and clarity of goals for each interest, the results achieved relative to goals, and the impact of factors beyond the reach of the FFTF effort such as land-use. Staff transitions have also challenged the FFTF collaboration. In early April 2017 Pierce County Public Works went through a large reorganization, shifting staff and responsibilities at key positions, flowed four months later by the loss of the FFTF staff coordinator and Hans Hunger (the Pierce County engineer who led the initial formation of the collaborative group) as they left the County for new positions within a month of each other.

In general, the FFTF program in the Puyallup has been challenged by a dynamic that occurs across many integrated floodplain management efforts. Initial success (such as obtaining grant funding or acquiring properties within a project area) tends to bring in new stakeholders while also bringing new issues to the forefront. This has required the FFTF group to go back to earlier steps in integration such as redefining what the vision, goals and appropriate actions now that more people were engaged. At times this has felt locally, and even has been perceived by regional leaders, like a setback. However, the Puyallup has shown that these "setbacks", when handled with care and attention, are actually part of the integrated floodplain management cycle and signaled in the Puyallup that the collaboration was reaching a new level of complexity and integration.

Next Steps

With the staff transition, Anne-Marie Marshall-Dody, the Planning and Partnerships Manager at Pierce County Surface Water Management, has taken on leadership of the group. Anne-Marie's skills in planning and management are building the framework to institutionalize the program into Pierce County and to truly integrate across the multiple planning efforts the County manages and participates in. These efforts include planning processes such as Comprehensive Flood Hazard Management Plan, Flood Control Zone district capital programs and planning, mitigation efforts from transportation and Port activities, the Floodplains by Design vision, and broader efforts. This effort will make integrated floodplain management the new way the County does business, an approach that will go beyond just a Floodplains by Design grant. The County just recently filled the vacant FFTF Coordinator position. The FFTF program, and all the partners it represents, is developing the organization and process structures that will strengthen and deepen their collective vision, goals, and actions. This structure will also allow the County to better leverage both its own other programs but support their partners as they too put their shoulder to the wheel. The program is currently investing in building the capacity of salmon recovery interests commensurate with the capacity of staff working on flood risk management and agricultural viability. A core team has recently been created across interest areas to better coordinate and leverage projects and investments. In the last round, FFTF developed a sophisticated program to

- In 2016 Snohomish County hired a dedicated staff person to coordinate the SLS effort - a major investment **to institutionalize** integrated floodplain management.
- SLS coordinates an integrated floodplain management workplan that supports the multi-interest groups- fish, farm and water related interests that supports **shared goals and actions**
- The SLS Executive Committee consists of **participants** from tribal, farm and environmental organizations. Regional organizations also participate in SLS as conveners.
- **Technical information** is being gathered to support the development of the Agriculture resilience plan examining **climate change effects** and their impacts to agriculture viability.
- FbD funding in the 2013 grant round allowed for the feasibility and design of a dairy omni processor, which would **convert dairy waste into clean water and support agricultural viability** in the local community.
- To combat the farmland conversion risk, the Stillaguamish Valley Protection Initiative (SVPI) under the Sustainable Lands Strategy principles have a **shared vision** to preserve large blocks of farmland that does not preclude salmon recovery efforts, but limits the threat of future development.

track progress, and they are now moving to fully implement that program, including development and refinement of a publicly available website. Over the next four years, FFTF partners have set their sights on aligning their work and a broader suite of efforts necessary to achieve their ambitious and collective vision for the watershed.

4.4 CASE STUDY: SUSTAINABLE LANDS STRATEGY (SNOHOMISH AND STILLAGUAMISH)

To help resolve conflicts between salmon recovery, tribal and treaty rights, and agriculture, Snohomish County founded the Sustainable Lands Strategy (SLS) in 2010. SLS focuses on Snohomish County fish, farm and water related interests and includes both the Snohomish and the Stillaguamish watersheds. The SLS Executive Committee consists of eight members, representing the Tulalip and Stillaguamish Tribes, local farms, the Snohomish Conservation District, Pilchuck Audubon, and Ducks Unlimited. Regional organizations, such as NOAA, WDFW, TNC, PCC Farmland Trust, and Forterra also participate in SLS as conveners.

Increased integration through the SLS process has led to development of an active work plan. The SLS work plan includes work on regulatory efficiency, development of reach-scale plans, resource protection (including development of an Agricultural Resilience Plan), and communications and engagement.

Over the past several years, partners in Snohomish County have put substantial energy into raising agricultural interests onto an equal footing with salmon recovery interests. As part of that effort, the Snohomish Conservation District is developing an Agricultural Resilience Plan for Snohomish County. The goals of the plan are to provide information and project funding for farmers to manage for future risk on their farms; develop landscape-scale projects to improve agricultural resilience; and protect agricultural lands from development and fragmentation. As part of Agriculture Resilience Planning process, TNC in collaboration with the Conservation District successfully implemented a PhotoVoice project to empower and engage farmers and help them articulate the key issues and challenges for small scale farms in the Snohomish County.

A major stimulus to advancing farmland protection work is an increased commitment that regional partners (such as Forterra, PCC Farmland Trust, WDFW, and TNC) have made to contribute expertise to local partners in building a Snohomish County Farmland Conservation Strategy. The Snohomish County Farmland Conservation working group (led by PCC farmland Trust) has established farmland protection goals and developed an agreed upon roadmap and strategy for farmland conservation that supports an integrated multi-benefit landscape approach. The Farmland Conservation working group is a significant step in supporting long-term agriculture viability in the County that supports a strategic rather than opportunistic approach.

For the last eight years, Snohomish County, with the financial assistance of regional conveners, has supported a neutral facilitator for the SLS committee and meetings. In addition to this investment, in 2016 Snohomish County hired a dedicated staff person to coordinate the SLS effort and manage the reach scale planning process, a major investment in integrated floodplain management and collaboration.

4.5 CASE STUDY: SNOHOMISH

Floodplain Management in the Snohomish Watershed

The Snohomish River is the second largest tributary to Puget Sound, draining approximately 1,856 square miles. The Snohomish runs through a major urban area (Everett) before draining to the Sound. Agriculture is a major floodplain land use in the Snohomish, and over 80 percent of designated farmland in Snohomish County is in the floodplain. The floodplain is home to a number of salmon species and federally listed Chinook, Bulltrout, and Steelhead.

For many years, the floodplain farmers in Snohomish County (including Snohomish and Stillaguamish basins) were embroiled in what came to be known as the “Dike Wars.” The flood system was managed by small and uncoordinated special purpose districts comprised of groups of farmers. To protect their lands, they would raise their dikes higher than their neighbors. As one side of the river was better protected water would be shunted off in another location or serious breaches would occur. This caused significant flooding and impacts and growing local animosity. After years of conflict the Silver Fish Agreement, named for a local favorite hangout, was signed and the farmers agreed to stop acting independently and plan for flooding as a community. One member of the community noted, “I tell you when I was up in that helicopter in 2006 and I saw all of our levees overtopped [during a major flood]—throughout the whole system and not a one of them breached. Now that is teamwork. It wasn’t always like that. That overtopping represented the end of the dike wars. Before, those old farmers would be buying each other drinks while someone else was on a tractor making their side of the levee higher. We just don’t do that anymore.”

Flooding is currently managed by a system of diking and drainage districts with support and input from Snohomish County. This local scale means flood management in Snohomish County has struggled to raise the funding necessary to keep pace with the increasing complexity of regulations, aging infrastructure, and technical resources available such as modeling, LIDAR and other management tools to keep pace with increasing water infrastructure demands.

Regular flooding and land-use restrictions have meant that a large portion of the Snohomish floodplain has remained in farming and open space. In 2008, a multi-benefit salmon recovery plan was signed, which articulated quantifiable habitat goals and targets for the recovery strategies. As the plan moved fully into implementation it became clear that the broader agricultural community did not fully support the plan and restoration efforts were slowed and regularly contested by the agriculture community.

Results

Since starting SLS, partners in the Snohomish Watershed have implemented several projects, developed reach scale plans, and increased the level of trust among collaborators. In 2013, Snohomish County received \$900,000 through a Floodplains by Design grant that created a multi-benefit GIS assessment for the Lower Snohomish, mapping key flood infrastructure and habitat projects. Snohomish County, in support of SLS needs, also received a 2017 EPA grant to complete fish, farm and flood reach scale plans for the Lower Skykomish River, the Lower Stillaguamish, and the Snohomish River and Estuary. The first two are complete and the last two will be completed by the end of 2018.

Two major restoration projects have also been advanced in the floodplains of the Snohomish Watershed. Snohomish County has been pursuing restoration of Smith Island – construction began in 2015, and setback levee construction is currently underway. The existing levee is expected to be breached in fall 2018. The Tulalip Tribes also has completed the Qwuloolt Estuary project, a major floodplain reconnection project on Ebey Slough. These two projects, together with the Port of Everett's Blue Heron Slough project, will restore around 1,100 acres of tidal marsh estuary, meeting the 10-year targets established in the salmon recovery plan for the watershed.

Challenges

Despite years of collaboration and conceptual agreement on an integrated vision, Snohomish SLS participants have struggled to develop an integrated set of strategies and actions that achieve the goals and continue to have the support of the partnership. Taking a set of isolated, but supported, actions by interests and moving toward an integrated set of strategies is no small feat and must overcome cultural, technical and capacity challenges. SLS is still making this transition. Snohomish Watershed practitioners have struggled to obtain and maintain consistent funding for integrated floodplain management. In 2013, Snohomish County successfully secured Floodplains by Design grant funding to start advancing reach-scale planning. However, in developing a grant application for the 2015 FbD grant round, it became clear that not all stakeholders were in favor of the specific projects being proposed and that movement towards integration as opposed to separate supported projects had temporarily stalled. The proposal was ultimately pulled by DOE from the final ranking. For the 2017 FbD grant funding round, the County sponsored a successful collaborative proposal with broad support, but it unfortunately was not funded.

Integrating flood risk reduction into the SLS effort continues to be a challenge. One reason is that the Flood Hazard Management Plans for the Snohomish and Skykomish rivers are out of date and were written before the farm-fish-flood collaborative effort and salmon recovery planning effort. Also, there is a level of integration within the flood risk management community that is still required due to the legacy of small independent districts with limited revenue and staff capacity. These diking and drainage

districts remain primarily responsible for separate parts of the flood management system and in many instances the authority and responsibility of the County to address flooding is limited and underfunded.

Next Steps

Partners in the Snohomish Watershed are currently developing an application for the 2019 funding round of Floodplains by Design, with a focus on developing a more fully integrated set of actions to address both local and regional feedback provided in previous applications. The County in support of the SLS executive committee created an inter-agency team consisting of the Tulalip Tribes, the Conservation District, and County flood engineers, biologists, and planners to develop these reach-scale actions. A key next step is to successfully complete the package with local support (including other stakeholders at the SLS table) and submit the full Floodplains by Design application.

The desire to secure Floodplains by Design funding and previous failures to achieve it has sparked a willingness to consider new ideas, view integration at the next level of complexity, and to seek part of the funding to help address the challenge of getting to more integrated strategies and actions by staffing a group tasked with developing integrated sets of projects and actions at the reach scale.

Next steps for the Snohomish Watershed also includes continued work to address the complexity of dealing with flood risk in Snohomish County and to ultimately integrate flood risk reduction needs and actions more fully into SLS strategies and actions.

Additional work on the Agriculture Resilience Plan will also be critical and will include integrating agriculture strategies and actions with climate change impacts (i.e. groundwater, sea level rise and flood modeling and crop impacts) to build strong support for a set of integrated actions that supports long-term agriculture viability in the County.

4.6 CASE STUDY: STILLAGUAMISH

Floodplain Management in the Stillaguamish Watershed

The Stillaguamish River drains a 684-square mile basin and empties into Puget Sound at Port Susan and Camano Island. The largely rural floodplain area includes agriculture and numerous salmonid species. The floodplain is home to a number of salmon species and federally listed Chinook, Bulltrout and Steelhead. Chinook in the Stillaguamish are significantly challenged, with only a couple hundred fish returning each year. The Stillaguamish Watershed Council was founded in 1990 to address natural resource issues in the watershed, especially salmon recovery. The SWC is focused on actions that restore watershed processes that support Chinook salmon, the protection of existing habitat through regulatory and non-regulatory measures, stewardship education and outreach, and ongoing monitoring and adaptive management. The Stillaguamish salmon recovery plan focuses actions on addressing key limiting factors for Chinook salmon populations in the watershed. These limiting factors have been grouped into the following six categories: estuarine/nearshore, floodplain, riparian, large woody debris, sediment, and hydrology.

In the 1990s, Snohomish County experienced several devastating floods, four of which were declared natural disasters. In response to these floods, in 2003 the County initiated a stakeholder-driven process to develop the Stillaguamish River Comprehensive Flood Hazard Management Plan. The Stillaguamish

Flood Control District maintains around 25 miles of levees in the lower mainstem. The other 12 miles of river are managed by the Corps and Snohomish County respectively. The Stillaguamish River is primarily driven by a rain dominated system and flood risk is at its highest during atmospheric river events.

Up until the 1980s, agriculture played a key role in the economy of Stillaguamish basin. Historically, dairy farms were the cornerstone of local agriculture; however, over the past two decades, farming has changed significantly, with interest shifting from dairies to smaller diversified crop farms, agritourism, and pumpkin patches. With increasing pressure from population growth and a growing appetite to live in the Puget Sound region, the Stillaguamish valley is threatened by increasing development pressures.

Integrated Floodplain Management in the Stillaguamish Watershed

The Sustainable Lands Strategy (SLS), formed by Snohomish County in 2010, covers the Stillaguamish Watershed as well as Snohomish Watershed. SLS was formed in order to help resolve conflicts between salmon recovery, tribal and treaty rights, and agriculture, and more recently is working to also integrate flood risk reduction.

The Stillaguamish Tribe has been the primary sponsor for FbD grant applications. In addition to SLS, the Stillaguamish Watershed Council also provides a letter of support for developing Floodplains by Design grant applications and pursuing multiple-benefit solutions.

Results

Floodplains by Design funding in the 2013 grant round allowed for the feasibility and design of a dairy omni processor, which would convert dairy waste into clean water and support agricultural viability in the local community. While funding for construction of the project has not yet been fully secured, the development of the project is an important milestone in collaboration between the tribal and farming community. The FbD grant also funded planning and design work for acquisition & restoration and flood feasibility and design projects.

To combat the farmland conversion risk, the Stillaguamish Valley Protection Initiative (SVPI) was established in 2017 under the Sustainable Lands Strategy principles to realize a unified vision that is aimed to preserve large blocks of farmland in the valley that does not preclude salmon recovery efforts, but limits the threat of future development. Multiple partners have come together to identify the highest priority lands and to conduct outreach to farmers. Over 25 landowners have expressed interest in pursuing easements. Forterra has also been developing a TDR bank to increase conservation of agricultural properties within Snohomish County.

As part of the SVPI, salmon recovery partners overlaid data sets highlighting key salmon habitat areas to better understand where agricultural conservation efforts might conflict with salmon recovery priorities to foster conversation and dialogue about potential solutions. \$1 million in funding from the Conservation Commission for conservation easements has been awarded to the SVPI effort to protect farmland that supports an integrated landscape approach.

Two major restoration projects in the Stillaguamish Watershed are underway or complete. The Stillaguamish Tribe has completed the Zis a Ba project, a 90-acre restoration project in the Stillaguamish

Delta. Nearby, WDFW and Ducks Unlimited have been pursuing restoration of Leque Island. Construction is underway on this approximately 300-acre project.

Challenges

The urgency around salmon recovery and agricultural land protection continues to be a major challenge in the Stillaguamish Watershed. Balancing the need to support agriculture viability in the Stillaguamish Valley and the need to rescue Chinook runs literally from the brink of extinction and to prevent sprawling development are major issues that either stalls or accelerates collaborative efforts. These high stakes can make collaboration a challenge in the watershed.

Similar to the Snohomish Watershed, flood risk reduction has not yet been fully integrated with other interests. There is a Stillaguamish Flood Control District that participates in the Snohomish Watershed Council and SLS, but partners don't fully understand flood needs and how they can be integrated.

Next Steps

Installation of the dairy omni processor is a key next step for work in the Stillaguamish Watershed to support agriculture and improve water quality.

Snohomish County, through SLS, is currently completing the reach scale plan for the Stillaguamish, which will set the foundation for integrating fish, farm and flood projects and provide improved technical information for the various interests. The next step will be to use the reach scale plan to further guide the development of a suite of actions that protect farmland, support agriculture and drainage, support salmon recovery, and integrate flood interests and water quality needs.

The Stillaguamish Tribe is submitting a Floodplains by Design grant application. Completion of the grant application and, hopefully, implementation of the actions in the application will be a key next step.

5 LESSONS LEARNED

This section documents lessons learned by TNC and the contractor team as they have supported integrated floodplain management work at the watershed scale.

5.1 LESSONS LEARNED ABOUT THE INTERACTION BETWEEN REGIONAL AND LOCAL WORK

The leadership provided by the public-private partnership between The Nature Conservancy, Department of Ecology and Puget Sound Partnership is fundamental to the success of Floodplains by Design. Government brings resources, expertise and an understanding of government bureaucracies to the table. The Nature Conservancy, as the private partner, brings innovation, an ability to advocate where governments need to change and in support of where they are getting things right, and flexibility to the effort. The following lessons focus on what has been learned about the regional part of how to support on-the-ground transformation of floodplain management.

Regional Support is Needed

Regional support, such as has been provided by The Nature Conservancy and the FbD Management team, is very important to the success of watershed-scale integrated floodplain management. Local entities are under pressure to be constrained by traditional approaches. Regional support can help overcome those traditional approaches to stimulate integration. Outside support can counter the force inherent within current organizational structures and encourage people not to be bound by those structures. The [Coordinated Investment](#) approach, led by NOAA, is another example of an approach that unpacks local barriers to integration with state and federal rules and regulations. More and continued regional support is needed for Coordinated Investment or other similar approaches that are aimed at working at both the local and regional scales and targeted on innovative solutions and accelerating integrated floodplain management.

Incentives Drive Integrated Floodplain Management

Integrated floodplain management at the local scale is difficult and expensive. While there are many benefits to integrated floodplain management, it can be difficult for a local entity to invest the time, money, and work upfront. Regional actors can provide incentives that encourage integrated floodplain management. The Floodplains by Design grant program is one example – it shows project proponents that they can find funding for integrated projects if they conduct an integrated planning process. The Puyallup update in Section 3.2 shows an example of how incentives can drive integrated floodplain management. The Nature Conservancy’s role in advocating for continued funding at a significant level has been instrumental in building and maintaining support for the Floodplains by Design program. Government agencies are not allowed to advocate for funding in the way an outside private partner like TNC can.

Local Integrated Collaborations Are Under-Resourced

Integrated floodplain management requires extensive planning, coordination, and collaboration, and it takes a lot of time (both calendar time and staff time). There is currently no stable capacity funding source for this work. The Floodplains by Design grant program only provides capital funding for project-specific planning and implementation. For example, The Sustainable Lands Strategy (SLS) has sustained an integrated collaboration for more than eight years, leveraging county, state and federal funding. However, a stable funding source for this type to ensure longevity of this program and collaboration. The SLS creates an open forum to define floodplain management issues and collaboratively problem solve that doesn’t serve one interest but the interests of the broader community. In order to find agreement on an integrated set of actions, the SLS or other types of local integrated groups are a critical piece in order to implement successful on the ground actions. The Nooksack Watershed is currently pursuing integrated floodplain planning with an NEP grant through the Habitat Strategic Initiative – this is an example of how funding can spur integrated floodplain management. However, this funding source is not dedicated to integrated floodplain planning.

Regional Integration is as Important as Local Integration

There are significant constraints generated by state and federal laws, policies, and funding programs that limit, restrict, and hamper integrated floodplain management at the local level. These include grant programs that are inconsistent, regulations, permitting processes, Corps policy on levees, GI studies, cost-benefit analyses, and the lack of FCAAP funding. For the long-term success of the effort, continued

work on integration of regional policies and programs and advancement of incentives for integrated floodplain management within regional policies and programs is critical. Non-governmental organizations like The Nature Conservancy offer a unique ability to advocate and promote changes to outdated and inefficient governmental policies and programs.

5.2 LESSONS LEARNED ABOUT LOCAL INTEGRATION

The power of the private-public partnership extends to the local scale. The following lessons learned come largely from The Nature Conservancy's in-depth staff work in a variety of local areas to understand what integrated management looks like and from the convening of groups from across the region to share lessons learned and the status of their efforts.

There are Many Elements of Integration

Integrated floodplain management is complex and requires attention paid to many different elements. Figure 1 in Section 4 shows ten elements of integrated floodplain management identified by the Floodplains by Design team based on lessons learned from work at the watershed scale. Each element is important, but elements will likely be advanced on different time scales and work on each element isn't linear. Integration can occur within an organization (i.e., county government), within an interest area (i.e., integration within the farm community), or across interests and organizations. The list of elements in Figure 1 can be used to assess the status of an integrated floodplain management effort and to identify the next best strategic step.

Integrated Floodplain Management Requires Dedicated Staff Time

Each interest within an integrated planning effort needs staff capacity in order to define and articulate their needs and to seek and incorporate new information. An internal staff person can also lead projects that are prioritized by the group but that the group does not have capacity to lead. Integration across efforts also requires substantial staff time so having dedicated staff who are neutral across interests and can coordinate the integrated floodplain collaboration effort is essential. In addition, dedicated staff need to have the support of their leadership to engage in a long, complex, and time-consuming process with unpredictable outcomes.

Integrated Floodplain Management Requires a Wide Variety of Skills

Managing integrated floodplain efforts at the local level is much more complicated than may be assumed. In addition to staff time, a wide variety of capabilities and skills are needed. The needed skills are complex, nuanced, and need to be performed at a high level. For example, technical skills, project management skills, the ability to hold a vision, the ability to fit an effort within institutional structures, facilitation, storytelling, and grant writing are all needed skills for these efforts (though a full list of skills would be much longer). It isn't possible for one person to have the entire skill set needed. Also, the emphasis of the skillset needed may change over time or suddenly if a crisis emerges. In order to be successful, a group working on integration needs to consciously increase its skillset through collaboration, training, peer to peer learning, and hiring outside expertise. Currently, training

opportunities for integrated floodplain management skills are ad hoc and an organized system is not in place.

Integrated Floodplain Management Works Best at a Bigger Scale and with More Voices Involved

The larger the scale (ideally a reach or watershed scale), the more possible it is to develop a package of projects to address a wide range of issues. Integrated management also works best when it involves a broad range of interests and voices. When floodplain interests are left out of the effort, they can present a barrier to implementation or fail to fully maximize the potential of a given site. It is also important to encourage specific interests (such as habitat recovery, or agriculture) to work together separately from the integrated group in order to make sure they can represent their interests in a coordinated way that reflects their values. Then, integration efforts should focus on creating shared understandings across different interests. Continued outreach to ever-widening circles helps build support and understanding.

Early Actions Set Integrated Floodplain Management into Motion

Early actions can set integrated floodplain management into motion. Even if early projects create friction or are imperfect, how they move forward can build trust as participants from different interests see each other working together to ultimately shape a shared project. Early projects at a smaller scale present a good opportunity to test integration and to build relationships. Fully integrated floodplain actions can take a long time, so pursuing early actions that support the diverse interest of the collaboration helps improve conditions on the ground in the meantime. It isn't necessary to wait until everything is sorted out (such as having all scientific studies completed or all parties at the table) before acting on key early actions. Pursuing early actions and learning from them also helps an integration effort to be flexible and adaptable.

Sustained Integrated Floodplain Management Requires Tracking and Measurement of Progress

Integrated floodplain management by nature includes a wide range of goals, both interest-specific goals and shared goals. If participants don't see that progress is being made on the goals they find most important, it will be difficult to maintain both trust and momentum. In addition, being able to document success is key to bringing in new participants and seeking funding. Indicators of progress need to be both measurable and meaningful.

Data Management for Integrated Floodplain Management is Complex and Essential

Integrating efforts across governments, organization and partners requires transparency and the ability to see the sum total of a variety of efforts in one place. As collaborations get to scale and are working on a number of projects with different lead agencies and different funders being able to track and see the work of the group easily and efficiently is essential. Most governments and organizations are largely set up to track their own work. Often a separate dedicated effort is required to bring the various pieces together in a manner that multiple parties can access. Thoughtful management of data will help ensure that science can provide a basis for discussion and agreement.

Storytelling Uses Empathy to Build Understanding and Respect

Empathy is at the core of what builds understanding and respect. Collaboration only works where there is understanding and respect for other interests and the needs of others. Storytelling skills can be used to evoke empathy from others by conveying in a very human way the importance of various aspects of integrated floodplain management to the storyteller. This is useful with local partners as well as with regional supporters or funders.

6 RESOURCES NEEDED AND RECOMMENDATIONS

6.1 RESOURCES NEEDED

A number of resources are needed to advance integrated floodplain management at the local level, including additional funding, added staff capacity, training and guidance materials, and support for engaging diverse partners.

Additional funding is needed to meet the funding gap for integrated floodplain management projects. As noted above, \$99 million of projects were submitted to the 2019-2021 funding round of the Floodplains by Design grant, which represents just a fraction of the total funding need. The 2016 Visions and Strategies report found that, in nine river reaches across four watersheds where there were defined integrated floodplain management actions and costs, an investment of \$340 million was needed to carry out the identified actions. A 2014 Floodplains by Design report found that Salmon Recovery Work Plans included an estimated \$788 million in floodplain-related capital costs, while capital costs included in flood risk reduction plans across Puget Sound total \$2.2 billion. While some projects have been funded since these estimates were developed, there has been no substantial decrease in the funding need and potentially an increased need as development has continued across the region.

Funding is also needed to increase staff capacity for integrated floodplain planning and project implementation and to institutionalize integrated management. The Floodplains by Design partnership has been able to provide limited support to project sponsors and to engage in four watersheds, but additional capacity funding would be needed to engage in additional watersheds. There is also a need for staff people working at the local level who are focused on integrated floodplain management.

There is an additional need to better disseminate principles and practices for integrated floodplain management. This includes a need for more guidance documents as well as training opportunities. If developed and funded, these resources would help develop facilitators, project practitioners, and change agents who would advance integrated floodplain management at the local scale. In particular, the need for training in grant writing, facilitation, and consensus has been identified.

Successful integrated floodplain management at the local scale requires engagement of a diverse set of partners, including tribes, agriculture, and vulnerable communities. Local practitioners need more resources to help engage these partners. Regional identification of vulnerable communities subject to flooding and resource loss, and development of equitable strategies for engaging vulnerable communities would help local practitioners meet these needs. Similarly, stronger regional engagement of tribes and agricultural communities and added development of strategies for local engagement of these groups is needed.

6.2 RECOMMENDATIONS TO ADVANCE INTEGRATED FLOODPLAIN MANAGEMENT AT THE WATERSHED LEVEL

This section includes two sets of recommendations: recommendations for how regional groups (such as Ecology, PSP, and TNC) can support local integrated floodplain management, and key recommendations for local practitioners.

Recommendations for Regional Practitioners:

- Provide support. Support includes capacity, expertise, training, resources, venues to share cross-watershed learning, examples of successful efforts, and support with local elected officials. At this point in the Floodplains by Design initiative, there are four critical functions to sustaining the effort. The four most important functions are the public-private partnership that creates the regional “backbone” organization (a role that has been filled by TNC to this point), administrating and advocating for the Floodplains by Design grant program, strategic on-the-ground support locally to continue to both understand how to change the paradigm of floodplain management and change it, and hosting large regional workshops to promote shared learning.
- Provide incentives. As noted above, the Floodplains by Design grant program is a key incentive that should be maintained and expanded. Success in the grant program relies on the strategic use of the assets provided by the various public-private partners.
- Provide planning funding. There is currently no regional dedicated funding source for integrated floodplain planning.
- Integrate at the regional level. This recommendation includes all of the elements of integration but at a regional scale.¹ Integrating at the regional level also includes advancing the next steps identified by the Accelerating Projects Group (Section 3.3).²

Key Recommendations for Local Practitioners:

- Use the elements of integration. Understand that there are many elements of integration and that you need to continually consider the various components in order to assess the status of your effort and to identify the next best strategic step for your effort.

¹ Specifically, regional integration includes: efforts to improve the permitting process for large integrated capital projects, the need to help bring regional goals closer into alignment so programs support integration locally as opposed to working at odds, working with state and federal agencies to create a regional context that supports the outcomes of local planning efforts, Comprehensive Flood Hazard Management Planning (CFHMP) guidance update, Continued work of the state grant coordination group (Aligning Salmon and Water Quality Grant and Loan Programs), Interagency collaboration on topics like climate change guidance

² Specific Accelerating project recommendations include: Working with the grant coordination group to address barriers related to coordination of grants, Coordinate with and help advance efforts to address barriers to property acquisition, Examine parts of the permitting process (fish windows, water quality certifications, and the Joint Aquatic Resource Permit Application (JARPA) process) to document difficulties with the permitting process, the impact of the regulations on floodplain restoration projects, the best science in support of protecting ecosystem functions, and potential policy changes

- Add capacity. Make sure you have the staff capacity needed within each interest area of significance and to help assist the integration across those interest areas. Consider hiring dedicated staff.
- Foster skills. Consciously gather the variety of skill sets needed to advance your effort.
- Broaden your effort. Work to broaden the scale you are working at and the breadth of voices participating.
- Pursue early actions. Pursue early actions to build trust and to set the cycle of discussion, agreement, and action into motion.
- Track and measure. Establish a mutually agreed-upon system to track and measure progress toward your shared goals.
- Manage data. Invest effort into data management systems that allow for complex integration and transparency within jurisdictions such as a county with different departments and divisions as well as with outside partners.
- Tell stories. Encourage storytelling as a means to building understanding and respect across people and interests.

Appendix A – Local Stories

As noted in Section 4 of this report, storytelling is a key strategy for building empathy and respect between stakeholders with different interests. Telling stories is a key recommendation for local practitioners listed in Section 6.2 of this report. With this in mind, the TNC invited around 20 local practitioners to participate in a storytelling workshop on April 24, 2018. Each participant learned storytelling skills then developed a story based on their experience with integrated floodplain management in their watershed. Then each participant told their story with the cohort from their watershed at the regional Floodplains by Design workshop on May 30, 2018. This appendix includes the final written stories by local practitioners.

Dungeness River Cohort

Cathy Lear – Clallam County

Imagine, years ago, that it's summer on the Lower Dungeness River. Walk with me through the salt marsh, past the tidal channels, to the Bay. On the way back we stroll through the 80-acre pasture (dodging the cow patties), visit grazing cows, and watch eagles on the wing while we peek at the snow-capped Olympic Mountains. The river's murmur assures us that all is well with the world.

Winter tells a different tale:

Water burst through the levee again. For the 8th time in 7 years it went through Gil's place. This time it flooded his buildings, The water dropped mud everywhere, even onto his vintage Harleys and Cadillacs. It polluted his well and wrecked his septic system. The house was red-tagged and he had to move into an apartment in town.

I was new to the Dungeness River, in a way. I'd surveyed the river earlier in my career, searching almost in vain for Chinook redds. I felt bereft, and a little disoriented about the disappearance of Chinook. But the people who lived on the river? In my world, they were a backdrop to the drama of declining salmon runs.

As I looked at this place where levees choked both sides of the river and fish had such a small chance of surviving the sluiceway flows, it was obvious to me that the impediments to a freely flowing river needed to be removed, and habitat restored. If doing so helped people too, cool.

A group of agencies, the County, and the Jamestown S'Klallam Tribe applied for funding to solve the flooding and fish problems near the mouth of the river. We received a grant to buy properties from those who were willing to sell. We would remove the houses, wells, septics, and other impediments to the river. That way, when the river burst through the levee, nothing would hinder its progress and no people or property would be in danger.

Published in the local daily newspaper, news of the grant award, generated an uproar in the riverside community. People converged upon the County courthouse demanding that the Commissioners explain why the County was taking their private property (it wasn't). Letters, editorials, and op-eds appeared in the paper, alternately blasting and praising the buyout effort. Newspaper columnists opined about the

decline of salmon, individual freedoms, and Western civilization. Fortunately, all of the partners held fast in the onslaught. In fact, it may have strengthened our resolve.

Our inquiries to those in the small community who might wish to sell and move were met with replies that ranged from 'Maybe' to 'Not just No, but Hell No!' At one meeting with the community, I walked up the entrance steps and passed two big guys who did not smile or say "hello", and who just happened to be packing some handsome pistols. At the same meeting, though, people asked why the County did not help them in their dire straits and stop the flooding. They also asked a lot of questions about the buyout process, and why 'I' was doing it the way 'I' was doing it (state process!). I felt quite battered at that moment. I looked at them all looking at me, waiting for answers because I was from The Government.

"I'm not a real estate person. I'm a fish biologist. But we have flooding and we have fish problems and someone had to do this and at the moment that someone is me," I said. The atmosphere in the room changed. I think at that moment I stopped being The Government and started being The Biologist, doing my best to solve a problem - certainly trying to take away people's land.

Land is close to people's hearts, and talking to someone about selling their property to 'the government' – particularly in those early days – was a delicate undertaking. In a small community, accessed by a private road controlled by a property owners' association run by people who oppose your project, how do you talk to each family in a way that respects their privacy, even though we are all in a fishbowl? We could not really figure out how to speak to people privately, and felt that in some ways we were barricaded from the community.

We decided to send letters, and meet people at their invitation. One day we met with Gil, who was tired of digging himself out after each flood. We walked up on the levee behind his oft-flooded house. One of his neighbors, a bully with a penchant for using intimidation to get his way and who adamantly opposed to the project, confronted us.

"I represent the people who live here, and we want nothing to do with your so-called project. No one wants to sell," he declared.

"You don't represent me. I do want to sell," replied Gil, to our stunned surprise.

Logjam broken. People began to quietly contact us, to talk about possibilities. Some people talked about how they loved to see the birds and the mountains, to hear the river (they did not love the flooding, but they adapted to it). Some people talked about the serenity they felt. Some people talked about their retirement dreams. Some people had been touched by tragedy and wanted to leave the area and its memories. Some people were mostly interested in the money they might make. Some people wondered if they might be able to move and start a new, different kind of life.

Some sold. Some didn't. Some didn't, and then did. Some are yet to be ready. But now, when the river flows unhindered and harmlessly through the places where Gil's house, and Denny's house, and other houses had stood, through a field no longer thick with cow patties, those who remain know what we are aiming for, and what our constraints were. They think the project is OK, that the river deserves some room to move, and the Bay deserves water free of cow patty runoff. They look forward to the day that fish would return to the river in numbers that their grandparents remembered. I look forward to that day, too.

Nooksack River Cohort

Ned Currence – Nooksack Tribe

I grew up running around barefoot in the Southern Appalachians, but moved to Western WA in 1985 to work for the Forest Service in Darrington. There, I quickly discovered the wonders of fishing for salmon and steelhead, with a special passion for fly-fishing for leaping summer run steelhead. I finished school then moved to the tip of the Olympic Peninsula for a few years where I began my career trying to help recover salmon. By the time I moved back to Puget Sound in 1995, I understood that the salmon resources were continuing to decline, and salmon fishing opportunities – Treaty and Non-Treaty alike – were dwindling.

Then about 20 years ago I began working for salmon recovery in the Nooksack watershed, and I've gradually realized how much of the resource we have lost. I came across a US Fish Commissioner's Report which lists 1895 Nooksack River catches that were sold to the canneries and the fresh fish market. A rough conversion of pounds to individual fish translates the catches to about 55,000 steelhead, 70,000 coho, and 22,500 chinook that were sold. This omits tribal catch, settler catch, marine catches and fish that survived to create the next generation. We had a lot of wild fish and this was prior to the first hatchery.

Today wild steelhead abundances average about 1,800 adults, wild chinook populations are 200-500 adults, and we have a couple thousand or less wild coho. That is 1-3% of the 1895 cannery catches across these species. With good freshwater and marine habitat conditions, populations can rebuild from low abundances because we have good survival from one generation to the next. That is often referred to as population productivity, and with habitat decline, less fish are produced per pair that spawn.

Now I realize there are many reasons contributing to the salmon decline, and a big one, across species, is how we have managed our floodplains over the decades. We have removed the logjams and burned the wood, and cut the stream adjacent forests that could have replenished it. We straightened our rivers and cut off highly productive floodplain side channel and slough habitats. We have converted wetlands that formerly produced coho into agricultural lands. We had hardened our river banks to reduce channel migration and flooding by armoring with rip-rap and levees. We have deficit instream flows too, due to out of stream uses of water. A lot was built with little consideration for fish. Now we add climate change to the mix.

It is over 100 years of floodplain management history, and a lot to overcome. We, collectively, in the Nooksack watershed have begun to forge a path of more balanced floodplain management. Will we be bold enough to plan a future that explicitly includes salmon? We are well along with geomorphology assessments. These help quantify historic conditions and changes that the salmon have responded to. We are doing a habitat assessment that will inform how salmon have responded to these changes and projects that could be beneficial. We're doing good science. But I wonder, will we be bold enough?

We are committed to identifying opportunities to restore habitats, and habitat forming processes where we can. To do so will require willing landowners, substantial funding, and strong leaders to forge a new floodplain management paradigm. We also need the Army Corps of Engineers to buy into this paradigm.

The only real certainty we have is that status quo is inadequate if we want to have salmon to persist for future generations to enjoy. That isn't unique to floodplain management, but it will require improved floodplain management. We're down to 1-3% of former salmon abundances in Nooksack at best, and salmon are a big part of our quality of life. We have an opportunity and we are developing trust and respect. I am cautiously optimistic, but we have work ahead.

Paula Harris – Whatcom County River and Flood

Twenty years ago in August, when I moved to Whatcom County from Seattle, I felt like I was coming home. I grew up in the Lehigh Valley in Pennsylvania, an area with lots of farm fields and dairies similar to Whatcom County. The County was in the process of adopting the Lower Nooksack River Comprehensive Flood Hazard Management plan and as a young engineer I was excited to drive the train and implement the flood plan. The plan includes seven components. So my team and I started systematically taking the steps to implement the plan. We mapped where the river had been historically to better understand where it might want to go again and started trying to understand how sediment coming down from the mountains and glaciers may be affecting flooding. We built a computer model to tell us where the water goes and started using it to design projects to reduce flood damages and risk. For the first time ever, the County bought out properties that were in areas that flooded repeatedly.

We made good progress and I really felt like we were starting to accomplish something in my first 10 years at the County. But by then I started to realize the need to update the plan. Not only was the river changing but I realized the people who owned the land where projects were to be located had not been involved in developing the plan and may not be too excited when we tried to implement it. At this time, local politics, like those nationally, were becoming extremely polarized. It's also about the time I met Fred. He was working with some dairy farmers frustrated by poor drainage that was negatively affecting their farms and income. The farmers wanted the County to start removing gravel again to lower water levels in the river to improve drainage. Needless to say, the tribes and other regulatory agencies were not happy because they knew that science shows that gravel removal destroys fish habitat. Gravel is one of those polarizing issues in Whatcom County. The farmers pressured the County to develop a proposal for a gravel removal project so we could see what the regulatory agencies would require to get any gravel out of the river. Some of the farmers hoped that defining roadblocks to gravel removal would be the first step to change the laws and remove the roadblocks. One farmer even suggested I might be one of the roadblocks.

And with an election for a new County Executive on the horizon, I worried that I could lose my job and ability to support myself. At one of my Advisory Committee meetings, a citizen started ranting about how I was incompetent, that I should be fired, and that my committee didn't even have my back. The Chair thanked him for his comments and went on with the meeting. I realized then that I needed to do something to keep my perspective... so I decided to go to farm school. I went to Skagit Valley College two nights a week for two semesters, then took Fridays off from the County for 6 months to work as an intern on a farm and earned the first Certificate in Sustainable Agriculture that the college issued. I gained first-hand understanding of how tight the margins are in farming and how bad drainage can affect their bottom line. Perhaps the most important lesson I learned was that I needed to stop trying so hard to drive the train, to get to the answers I wanted. As long as I provide good info to decision-makers, I am doing my job, whether or not they make good decisions with it. My job doesn't define who I am.

That lesson came at the right time, because my team and I were thrown another curve ball. The County depends on federal funding to help repair our levees. After Hurricane Katrina the Corps of Engineers reviewed their policies and notified us that we had two years to resolve 80 issues they identified with our levees to keep getting federal money to repair them. This was a huge problem. The other option was to guide a planning process acceptable to the federal government, which would buy us more time to fix our problems. At first that put the fear of God into me. But then I realized this was my opportunity to get out of the middle man role. For years I'd gone back and forth between the farmers and the resources agencies feeling like I had a target on my chest and back. This process would require the farmers and regulatory agencies to speak directly to each other and relate as humans without me being the messenger. And it did just that. Over 3 years we developed a plan that was broadly supported and more importantly, not opposed. Relationships that formed through that process have lasted. They set the stage to transition from the flood-centric focus on our levees to the more holistic need I had begun to envision more than 10 years ago--to redesign how we "manage" the river and its floodplain to keep people safe, fish alive and farmers farming.

It feels like the stars are aligned right now. Our community is ready to collaborate and come up with a vision and a set of actions that we can all buy into. I truly hope we succeed because every year when I go back to the Lehigh Valley in Pennsylvania and see another field developed into another warehouse, I am faced with what our valley could become if we don't get it right.

Fred Likkel – Whatcom Family Farmers

My name is Fred Likkel, and I currently serve as the Executive Director for Whatcom Family Farmers. Although I no longer am involved in a farm, farming does run deep in my blood. I was born and raised on a dairy farm in Whatcom County, with generations further back than I can count involved in this wonderful community. Like most kids, I grew up taking this privilege for granted, not really understanding what a wonderful privilege this was. I also didn't understand the complex challenges it faced, both from forces within the greater agriculture community, and the unique pressures of farming in Western Washington.

A couple of life experiences changed my viewpoints, made me become more aware of some of these challenges, and some of the challenges ag created for others. First, I had the privilege of taking a biology course as a senior in high school led by a wonderful teacher passionate about exploring how our world and our actions in it affect our environment. Back then the issue was acid rain, and small experiments showed me how we needed to be better stewards of our environment.

Upon returning home from college the dream of dairy farming also hit crude reality. Financial pressures combined with my Dad's bout and eventual succumbing to cancer made it clear this was not to be my path. Instead, I embarked on a path of serving agriculture through serving the farmers themselves. First, through the feed and nutrition of dairy cows, then to starting an environmental consulting firm helping farmers, and finally as the executive director of an agricultural advocacy group, Whatcom Family Farmers.

I wish I could say this journey has all been a bed of roses, but sadly this isn't so. As I said earlier, our farms face unique challenges. Farming itself in all our country faces the difficulty of existing in an environment where "he who produces it the cheapest wins." This means economies of scale and

specialization, which while it may be the most efficient way to produce food often leads to larger and fewer farms. This does not match well with the Western Washington landscape with our small valleys and diverse landscapes. It also doesn't match up well with preserving that unique community identity I grew up with.

In the Puget Sound, we face additional pressures from a rapidly expanding population. Our land is being swallowed by this development, to the tune of 60% farmland loss in Western Washington. While many urbanites claim they like farming, when faced with the sights, sounds, and smells they too often complain. These complaints can lead to regulations not based in science, but rather on politicians and bureaucrats eager to please voters

Now, another tension has emerged to put further strain on farms. Many salmon species are endangered, and in the past several years farms have become the target of some groups ire, claiming they do more harm than good. Imagine with me: you are struggling to make a living, awash in debt (farming is expensive!) got the finger from a rushing urbanite while driving out to the field this morning and been accused of killing fish. Farmers, by nature, tend to be more introverted, and this pressure too often leaves them feeling that "farming isn't fun anymore"

My role is to help preserve farming in this unique corner of Western Washington, but to be honest, too often this feels like a battle I'm losing.

I won't lie here. The road ahead for agriculture in Western Washington is hard. The challenges I talked about earlier aren't going away and may very well be getting more difficult. But, if farming is going to survive it has to learn how to do a couple of things:

1. Farmers need to learn how to tell their story. The vast majority of the farmers I work with care very passionately about caring for their land and animals. They would rather not have more houses, and love to help salmon, providing it doesn't mean their farm goes away!
2. Farmers need to work collaboratively. By their very nature farmers are independent. They like the idea of running their own business, and don't like others sticking their nose in their business! Farmers need to understand that we live in a growing community that understands us less and less, and we need to engage the community, not run from it.

So, how does that look? Despite what many think, farms can be a huge help for salmon. The streams that provide water and habitat run through many of our farms. The soil that can filter out the pollutants that can kill fish we provide and control. There is definitely a place for us to work together! We have begun to engage the local tribal communities through our current FLIP process, much as we did with the SWIFF process, and this has led to some very encouraging exchanges. The farmers actually asked fisheries experts to come and teach them more about how salmon live, what's been happening to their habitat, and want to know how they can help. While we have a long way to go, I am encouraged.

Puyallup River Cohort

Jordan Jobe – WSU Extension

When I first started working with the farming community in Clear Creek in the Puyallup Watershed, I assumed we'd be able to sort things out, and find a clear and happy path forward within a couple years.

I imagined any misunderstandings between farmers, the County, the “fish people”, could be resolved over a couple beers, a handful of meetings, and a few hundred thousand dollars’ worth of really well-crafted research.

What I didn’t understand at the beginning was the power of that damn map. If you work in Pierce County’s Surface Water Management division, or live anywhere near Clear Creek, you know about the map. I see it when I close my eyes. I’ve had nightmares about it. I also had no idea about the environment of mistrust that had been brewing for many reasons in this area for years.

Back in mid-2015, while trying to come up with ideas for dealing with one of the most frequently flooded areas in the Watershed, the County engineers drew up a proposal for a ring levee at two different alignments. This levee, they said, would allow water to fill the inside, like a bath tub, and protect the infrastructure- homes, roads, barns- on the outside. Their desktop analysis came up with two alternatives- a mustard-yellow, and a bright green line, snaking across the landscape at weird angles, forming a giant, oblong, lumpy ring. Some parcels were destined for protection from rising waters, some destined to be converted to salmon habitat- or rice fields! Or, cranberries? The county wanted to know the best plan.

I studied the map in my office before I travelled down south to Clear Creek to meet the farmers for the first time. I tried to envision what this proposed earthen berm might look like on a landscape I’d never seen. It sounded weird, very abstract- probably not too threatening, just needed some adjusting on the map- a complicated but solveable problem.

My coworker and I drove up to Early Bird Farm. With an old brown brick farmhouse, rickety but picturesque gates, chickens milling about, and a requisite fluffy farm dog, I wasn’t sure what to anticipate.

The barn- old, red, and at the heart of the property- it turned out that that mustard yellow proposed levee alignment went straight through the barn. And down the street, to Inch Acres, and Wild Hare Farms, the line marched on through homes and fields. A half mile away at the giant block that encompasses Zestful Gardens, the mustard yellow line lopped off most of the 28 acres of fields, destining them to become habitat- or worse, rice fields. The less aggressive bright green line still clipped off valuable acreage of rows and rows of organic vegetables and free range chicken pasture on many farms.

It was immediately obvious why farmers were so angry and frustrated. The flooding- the same water that keeps their groundwater levels high, allowing for minimal irrigation needs, and strong, vibrantly growing kale and beets- wasn’t a problem for these farmers. The map was. Their distrust in the County was extended to me as well- a problem I didn’t anticipate.

Our initial goal of landowner engagement was actually pretty straightforward. Thanks to the map, these farmers and residents were extremely engaged. And the next couple of years were less focused on friendly meetings over beers, and more focused on directing those few hundred thousand dollars towards incredibly useful, practical research that documented specific issues impacting agricultural viability in the area.

After I very swiftly recognized that I had NO idea how wrong my assumptions had been about the map- I realized that I needed to understand all that I could about how water moved around this landscape, the way this floodplain served to build some of the richest, most fertile soil in the County- and the way this community of farmers stewarded that soil to grow food for County residents.

When the County created the map, they saw it as a way to communicate an idea for dealing with very real flood risk- to protect residents from increasingly dangerous floods. They saw a way to create much-needed habitat for dwindling salmon populations. And they sensed that the map might pose a problem for farmers, and genuinely wanted to understand how to gerrymander the mustard yellow and bright green lines around to better align with agricultural needs.

When I first saw the map- before I'd ever been to Clear Creek- I saw seemingly random polygons stretching across green fields and dots of houses. But when farmers saw the map, they saw how the fertile soil was divided away from the rest of the farm, how the sheep pasture was separated from the barn, and how their view of their chickens, hard at work fertilizing next year's veggie crop, would be interrupted by a massive earthen berm, leaving them at risk to become coyote snacks.

But that map- that now makes many of us, including County Staff, cringe, has served a really important purpose, too. It's given all of us something to push back on- it's brought really engaged farmers to the table to explain, and then work with my team to document how exactly agriculture will be risked by potential future actions. The County continues to show up, to listen and read and discuss. The farmers continue to explain how they interact with the land. I continue to learn more and more about the complexity of the land shown on that map. And we are all working to build mutual trust and develop a working partnership- we are all learning through this process.

The map, to me, now reveals several years of stories and places I've grown to appreciate and love- the Farm Camp where my 6 year old son runs around and plays with chickens in the dirt, eating sun-warmed berries. The stretch of muddy, grass-filled ditch that Pierce Conservation District and I spent months and months prepping and then planting a riparian buffer on, with the same engaged farmers. The field where a farmer pulled out carrots, brushing off dark soil and handing them out to snack on as we talked. The farm where I held my first absurdly cute baby turkey chick- the same farm where I regularly buy a rainbow of eggs with dark orange yolks that were my baby daughter's first food. This area has become a place I've grown to care about- to advocate for- to better understand. It's much more than a series of lines on a map- it represents a Watershed community, trying to listen and learn from each other.

Harold Smelt – Pierce County

It's funny how the words we use to describe something can tell a far bigger story than we realize. They tell us something about ourselves as well.

Back in the early days of Pierce County, agriculture was king and farmers wanted to protect their fields and their livelihoods from the floods of the Puyallup River so "Pierce County River Improvement" was born. Say that slowly. They planned on "improving" the river. There is a fair amount of hubris in that name. Make it straighter! Built levees! Move the water right along! This was just how people thought in that time. There was nothing that couldn't be "improved" by engineers.

The tools they had were pretty crude. Our community brought in mule trains and steam shovels to dredge out new channels. The river was straightened into an engineer's dream of perfection. Rocks and brush mats and log walls were all put in place to hold the river in place. In the Clear Creek area, agriculture could continue to thrive in those beautiful brown valley soils and the farmers knew they were safe from the river.

Except they weren't. Floods still happened and more investment in the river was needed. If we had learned anything during those early years, I'm not sure what it was because we spent the next 40 years "doubling down" on our earlier investment. By the 1940's our community was thinking in terms of "flood control"; the "river improvement" phase had passed, but we were still confident in our ability to "control" nature and control flooding. If we needed bigger and better levees, at least we had better tools. Now we had "big yellow iron" to build the levees higher. The lower Puyallup river was "paved" as concrete was used to line the levees to prevent any brush or trees from growing and slowing down the river. In the Clear Creek area, the farms continued, but more and more houses were being built. The area was obviously safe. There were all those big levees, right?

Except it wasn't; floods kept happening. Over the next 40-50 years, it started to dawn on our community that maybe we weren't as good at "controlling" floods as we thought we were. We learned that when you rely on levees to protect developing areas, you actually increase for risk of flood losses. We learned "There will always be a bigger storm" to threaten properties behind levees. Slowly "flood control" thinking gave way to "flood risk management". Hopefully these new words show that we were starting to respect the power of the river and the limits of our ability to control it.

This is where our community's story becomes my story as well. I started working for the County in 1986 and for more than 30 years I have watched how our community's thinking about floods has changed. With the flood hazard management mindset, we started using totally different tools to limit flood losses. Better maps were developed that showed where flood hazards existed. Land use restrictions were put in place. Development standards came about that allowed new homes in flood prone areas but made sure they were built high enough to stay dry when the inevitable flood happened. Some of the most frequently funded homes were purchased, acknowledging that these areas weren't suitable for homes. Projects with multiple benefits, such as habitat, got priority.

In the Clear Creek neighborhood, this had a big impact. A community had grown up here. There was a school, a fire station, hundreds of homes, mobile home parks, and yes, still some farmers battling against soggy soils and too much water most of the year. Our community's new approach meant some people couldn't build where they wanted to. Or remodel a flood prone home. What did the new rules mean for their property value? Through acquisition of flood-prone homes, whole neighborhoods were disappearing. At least this time, the County had gotten it right, right?

Except we hadn't. We still had lessons to learn. What about fish? All that river straightening, all that concrete lining, all that sediment removal, had impacted fish. What about agriculture? Farming is slowly fading away from Pierce County. The County realized it needed to again re-think how its rivers and its floodplain areas were being managed.

Over the last 5 to 10 years, "flood risk management" has been replaced by "integrated flood plain management". Hopefully those words mean that we're smarter now and are using science based

decision making. Now, instead of just worrying about floods and the impacts they have on our community, we know we need to include a broader set of policy drivers into our decision-making processes. Flood risk management needs to be balanced with preservation of fish habitat as well as preservation of the remaining farms in our community and Floodplains for the Future is one effort to make this kind of thinking the "new normal". Some of the most important tools that integrated floodplain management has added to our tool box are collaboration and partnerships. Decisions can no longer be made solely by one party with only one priority. We need to have farmers, and fish people and many, many others at the table to help chart out our future.

Maybe this time we'll get it right.

Kristin Williamson – South Puget Sound Salmon Enhancement Group

I have a story to tell that resonates strongly within me, and drives me forward in the work that I do. But this story is just my story as I am but a small player in this massive story. And this story began a long time ago.....

11,000 years ago, in fact....when the Puget Sound ice sheet retreated from our region for the last time. With the weight of the glacial ice gone, the earth rebounded and the Puyallup River began to emerge. Meltwaters moved the earth to carve the valley in the shadow of Mount Rainier, forming an expansive delta characterized by complex channels, tidal marsh islands, wetland meadows, and forested swamps. Salmon moved backed into the region and evolved anew to meet the special challenges of this post-glacial Puyallup River.

During this time, villages and camps of the First Nation's people of the Puyallup Tribe of Indians dotted the landscape and life in valley survived amidst the dynamic, and sometimes volatile, balance of the wild Puyallup River. Salmon were abundant and vital to all life in the valley- all that walks, crawls, trots, runs, swims and grows.....

In the early 1800s, migrants from the east started to arrive in the Puyallup Valley and word of the vast resources and un-tamed beauty of the Pacific Northwest spread across the lands. Such that, by 1872, the Northern Pacific Railroad had declared its Northwest terminus to be the mouth of the Puyallup River and the City of Tacoma and Commencement Bay found a prominent place on the map.

Development advanced and the once shining, emerald river delta, gave way to concrete, cranes, rail yards, and shipping canals, eventually resulting in a 99.9% loss of tidal wetland area. In less than a century, a large river delta that formed over thousands of years was cleared, filled, drained, paved, and all but completely lost. Salmon runs responded in turn, with staggering declines in numbers of returning fish and by the late 1990s the iconic Northwest resource, whose numbers seemed in exhaustible to the new settlers of the region, had also all but completely disappeared from the valley.

It was not until 1998 that I arrived on the scene of this massive story. A migrant myself from the East, I came from Minnesota in search of leaning and adventure. I landed in Tacoma and immediately fell in love with the City of Destiny- the inheritee of the terminus of Northern Pacific Railroad and all of the development that came with it- the City which now looms large over what was once the expansive tidal marsh lands of the Puyallup River Delta. When I arrived, I was gifted this story and it simultaneously broke my heart and awakened my soul to action. Because, this story, of a great landscape born out of

the last ice age, with prehistoric salmon which thrived over centuries, and tenacious river people who lived in a dynamic balance with the seasons, motivated me to insert myself into the legacy of the Puyallup River and adopt it to be my own. The notion that nearly one generation of people could move into a region, decimate the natural environment, and endanger the ability of salmon to continue to exist-- a species which has survived tens of thousands of years, through ice ages, massive floods, and volcanic mud flows- that is a story that was more than I could bear. That is a story that needs to change. So, I quietly vowed to my then 19-year-old self to find a way to be player in the story and to change its ending; to help seek and find a solution to share, balance, and restore the River's resources, and ultimately recovery Puyallup River salmon. I set to work consuming all the information I could on salmon and rivers and eventually I was lucky enough to land a job working as fish biologist on the Puyallup River.

Today, I am so honored to be a member of a group pushing forward towards a solution, because we believe it is not too late. The Floodplains for the Future Initiative for the Puyallup Watershed employs integrated floodplain management to work collaboratively across interest groups to find a new, modern-day, dynamic balance for life in the Puyallup Valley that includes healthy salmon runs, locally sourced food, and health and safety for the community, while honoring the rich cultural and historical heritage of the region. Funding streams to restore floodplains and rivers are working to empower communities to recover these wild and special places that define our Pacific Northwest landscape. Pierce County has committed to setting back levees, giving the river room, and putting into practice new policies focused, not on management of the river, but on river health and vitality. A large group of us involved in the Floodplains for the Future Initiative are focused on an 500 acre area in the Puyallup delta, where meaningful restoration in the Clear Creek basin can benefit all ages of salmon leaving and returning to the Puyallup River. A place where there is real space to recover some of the wild Puyallup River delta, while still providing viable agriculture for the local community.

As a member of the collective Floodplains for the Future initiative for the Puyallup, White and Carbons Rivers, I enjoy the benefit of listening to and learning from history. As a group, we seek history's wisdom, strive to learn all we can from it, and work so very hard to not repeat its mistakes. If I could choose to exist in any time and place, I think it would be here and now, because we know so much more than we did 100 years ago and we have such amazing tools to investigate, appreciate, and better understand the natural world around us. This is OUR time of awakening as the modern day people of the Puyallyup River, to make change, and to reverse the wrongs of the past. If we wait another 100 years to make change, the opportunities we have now will be gone- the fish, the farms, the floodplain will be gone. This is our moment and the actions we take today will shape everything that follows. Now all that said....it is not easy...

I know I will never see the full benefits of my work towards salmon recovery in my lifetime; because recovery of river systems and the salmon who rely on them does not operate on the scale of a human lifetime. But bit by bit, we can recover pieces of the landscape that have been lost. Working towards a new dynamic balance for the Puyallup River valley, given the status of salmon and the current human population size, is no small task, and sometimes the planning and negotiation and process towards a future, shared vision can be just as volatile as the old, wild, river itself. So, when burnout and frustrations arise, and they sometimes do, I come back to this story of the Puyallup River. The story

which was not just my story, that I have chosen to make part of my own, and I sling that story across my back and take the weight of its 11,000 year old history to put my shoulder to the wheel and drive forward towards a future, a future for the Puyallup River, I can believe in, a future I hope we can all believe in.

Quilcene River Cohort

Tami Pokorny – Jefferson County Public Health

If you had one word to describe the Big Quilcene River, what would it be? In our house, when our son Erik was a young teenager, that one word was “coho”. The river, the fish and several of the people he met while fishing were mentors to him. I don’t know what he would have done with his time if he hadn’t struck up a relationship with the Big Quilcene – it seemed to feed his soul in such a profound and vital way. When my husband and I weren’t available to take him there from home – a 15-mile round trip— he’d ride his bike. The motivation was the freedom he felt, I suppose, and that every evening or weekend along the river was unpredictable – how many fish would run up? Would he catch any? Who he would meet? It’s no surprise really, that a boy who loves to fish will see the local river as a source of fascination and wonder just as summer is turning to fall and the coho are anxious to get upstream. He grew familiar with every bend and pool in the lower three miles, but there was much about the river that he didn’t know.

Whether the fish are passing under the Linger Longer Bridge, or not, was often the subject of great speculation and investigation as the first big leaf maple leaves turn yellow. Each day through the summer, the Big Quilcene carries less and less water underneath the bridge. By August, it’s easy to spot coho swimming upstream in the shallow water. The river relies entirely upon ground water for its existence during this time, running at about 26 cubic feet per second or about a bathtub of water every four seconds. A few coho are willing to take a chance on these low flows, but most wait for the sweet scent of a new rainy season. The hesitation makes space for a surge of summer chum during a week or so in late August when these reddish purple-streaked fish dominate the channel, digging and spawning and irritating the fishermen. Finally, the first fall rains call in more coho. They fill the federal hatchery with eggs or land themselves into grateful freezers near and far.

By contrast, November’s Big Quilcene River is an often lonely place. The parking lot at Riverside Park is usually empty, and the traffic on Muncie St. is once again country quiet. November storms can send a hundred times as much water through the river channel as in summer and, occasionally, much, much more. Families living nearby maintain their vigilance and set out sandbags, raise important items off the floor, or gather loose furniture from the yard. They talk to each other and plan in case the road closes or they need to leave in a hurry.

What word or words apply to the river’s fierce wintery attitude, all inflated, rushing and shoving. Worry? Heavy equipment? Wait and see? Enough is enough? The Big Quilcene, like any respectable wild thing, doesn’t much care for confinement – in its case within an artificially straight channel pinned between two levees. “When are you going to set me free?” it seems to ask. “If you bust out, we’ll put you right back in!” is often the response.

Although the river is sometimes loud and raging, it lacks hearing, compassion or the capacity for rational discourse and relies, instead, on the voices and perspectives of the neighborhood to speak for its interests and to define its place within the community. What if the river stood up and walked out of the negotiations? “Good riddance,” say some, “what a relief.” But generations of kids old and young might object, especially the ones who are tuned to the river’s voice when it sings softly to them and the coho in the late summer and early fall, sometimes about the floodplain it once knew.

As for my son, he fished commercially in Alaska for pink salmon and halibut during three summers of high school and just graduated from Peninsula College. Now he’s planning a big sailing trip before settling into the next two years of school. I think that trip will be a success if he comes home safe having learned from the winds and waves even half of what he did while fishing the Big Quilcene River.

Skagit River Cohort

Jenny Baker – The Nature Conservancy

I grew up on a hill in the middle of the lush Skagit Valley just a couple miles from Padilla Bay. I roamed the woods, wetlands and fields that surrounded our home. I dammed ditches with rocks to see how the water flow changed, crawled along hidden pathways through tall grass in the fields, linked downed logs to make my way through forested wetlands, and biked to the beach to hunt for rock-dwelling crabs.

When I was about 12, I joined the throngs of kids that headed out into the farm fields to work for the summer. Not old enough to drive a coveted pea-viner, I picked raspberries, thinned spinach grown for seed, and did all sorts of tasks on an apple orchard. I worked hard but I also had a lot of fun – we kids goofed around, sang, harbored secret crushes, and teased each other. I came home tanned, dirty and tired, the sweet smell of raspberries, spinach pollen or apples soaked into my skin.

These two equally wonderful and formative experiences have molded me as a person. I am deeply committed to sustaining vibrant natural habitats and abundant local farms. And I feel incredibly lucky to be working in a space where I support and collaborate with folks who till the fields, manage the dike and drainage systems, and speak for the salmon to make sure nature and farming thrive. So, when I got to work on a new effort in the Skagit I was really excited.

With a set land base and many competing needs including habitat restoration for salmon, a rapidly growing population, and maintaining space for farming, there had been many fights over the years about how to manage the land in the Skagit delta. We embarked on a new effort looking for a suite of projects that would be broadly supported. The idea was to assess potential projects and their ability to benefit farmers and salmon populations, and reduce flood risk – we would use all three of these lenses to determine which projects rose to the top as priorities. This really spoke to my interest in wins for both nature and farming.

A diverse work group spent a lot of time having meaty discussions and sifting through reams of detailed technical information. We wrestled with questions like: If a particular project was advanced, what positive outcomes – or benefits – would there be for the farming community, flood managers and salmon runs?

For instance, the farm folks wanted projects that would take place on publicly owned land, flood folks wanted projects that reduced floodwater heights, and fish folks wanted projects that produced lots of young salmon. What science was needed to quantify these benefits for each project? When we looked at the results did they seem right? We went back and forth... discussions, modeling, science... back and forth... again and again. And there was a lot at stake – some folks were there to protect farmers' land and livelihoods, some to protect homes and businesses from washing away during floods, and others fighting the extinction of an iconic species. With lives and livelihoods on the line it felt emotional and heavy at times.

After several years of meetings and discussions, there seemed to be agreement on comparing the relative benefits of projects across interests, but energy in the group was low. Blank eyes, tired expressions... these signals felt out of step with the accomplishment of finishing a years-long effort. Were people burned out?

A smart, thoughtful woman from Washington Department of Fish and Wildlife named Jenna was there – and she heard or noticed something underlying the lull in energy: this notion that projects would provide benefit to farms, fish and flooding, and that we could characterize negative impacts as less of a benefit, wasn't quite right. For projects that would have negative impacts, especially to agriculture, we needed a way to call that out more clearly. Jenna had an idea about how to do this – a simple change to the rubric we were using.

It was fall when Jenna presented her idea to the group. I'm sure some of the folks in the room were feeling the pull of harvest time and all that needed to be done outside of these seemingly endless meetings, so when I heard agreement and excitement in the murmurs and whispers around the room I knew Jenna had hit on something that really resonated. Calling out negative impacts as impacts, and not as lesser benefits, was really important.

As a result, we ended up changing how projects were assessed and prioritized. It was a big shift – honestly, one I worried about at the time because it didn't match up with what we promised funders and others we'd vetted this with. But it was clearly the right change. Participants later said they felt heard and their reality is captured more accurately. Now every member of the work group is satisfied with the results and priorities we came up with.

This was a hugely satisfying experience for me. We asked folks for a ton of time and commitment... and we asked them for their trust. Knowing that this community's values are captured in ways they care about is incredibly rewarding. The work isn't over and there will be challenges ahead, but agreeing on priority projects and a pathway forward that really resonates with many farmers and fish advocates is a big step. I'm proud to have contributed to this work in a landscape that I love.

At the end of a long day in the office, when I head out on my bike through a tapestry of rich farm fields and along river corridors cooled by stately cottonwood groves, I'm reminded of what I'm working for... this rich landscape that sustains salmon, farms, and the people who live here, and the opportunity for kids to play in streams, hide in grassy fields, and taste delicious, local, sun-ripened berries.

Skykomish River Cohort

Evan Bauder – Mason Conservation District

Good afternoon, my name is Evan Bauder. I am the Habitat Program Manager at the Mason Conservation District, and I focus a lot of my work in the Skokomish River watershed.

I had the great pleasure of working with Rich Geiger for about 7 years. Rich worked in the Skokomish for nearly two decades; first as the Mason County Engineer, then as the Mason Conservation District Engineer. Rich was a leader in the Skokomish Watershed stakeholder community.

The Skokomish is beautiful, but also harsh. Most have seen well shot photographs of salmon swimming across the road in the Skokomish, but they haven't seen, or smelled, ditch lines full of dead salmon after being stranded by flood waters, or the fields glittered with red salmon eggs washed away by the flood. Many have driven through the Valley on a beautiful day on the way to visit one of the recreational destinations in the watershed, but they haven't seen the unstoppable transition of lush farmland to open water wetland.

Working in the Skokomish is challenging, but Rich had an amazing personality that helped bridge difficult situations such as conversations about varying land use interests. He was dedicated to his job, and was passionate about helping people in our community by solving complex problems with solutions that could be agreed upon by most. Rich was empathetic, caring, and thoughtful of everyone's position. He wanted to help fish populations recover, farmland to become viable once again, the local economy to flourish, and to see lives of valley residents improve all at the same time.

Rich started as the county engineer in 1997, and flooding conditions in the Skokomish had already become severe. Property buyouts had begun about three years earlier. One property was purchased in November of the same year Rich started, and one month later a major levee failure occurred on the property now owned by Mason County. Rich received notice of the breach, and immediately contacted a local construction contractor in the Valley to deploy an excavator and to help him source materials. Throughout the night Rich orchestrated an emergency repair on the levee. John Bolender, County Commissioner at the time (currently District Manager), was also on site during the repair. John's brother was running the excavator. John recalls that it was pouring down rain and the winds were fierce. The river was sending raging water all around them, and the excavator seemed to be in constant peril. Through the adverse and dangerous conditions Rich successfully led the team to victory. When morning came the levee had been repaired, and many livelihoods had been relieved of this added threat.

Also during Rich's first year with Mason County; the Skokomish Comprehensive Flood Hazard Management Plan was completed. Rich worked hard to implement this plan, but was unsuccessful due to lack of funding and other more complicated policy/political reasons. New ESA listings created new barriers not anticipated during plan development, and this was a period of mistrust between the Skokomish Tribe, Mason County, and Tacoma Public Utilities. Their relationship was challenged due to the complications imposed by Tacoma Public Utilities' effort to relicense the Cushman Dam.

Then, 6 years later another major flow event caused the North Fork to penetrate a different section of the levee system. In this single flood event the confluence between the two forks migrated downstream as the North Fork carved 1.25 miles of new channel. The river blew through undisturbed ground taking full grown trees with it. The power and instability of the river was becoming more and more apparent. As a result, Mason County and the Skokomish Tribe petitioned to the US Army Corps of Engineers to conduct a General Investigation of the Skokomish Watershed. The purpose of this effort was to conduct a comprehensive assessment of the watershed, and develop an overall restoration plan.

Fast-forward a couple more years: the Skokomish Tribe and Tacoma Public Utilities agreed to coordinate on restoration of the Skokomish Estuary. Although they were engaged in the lawsuit over the dam relicensing, they agreed about the importance of moving forward with restoring the estuary. The estuary restoration was completed over a ten year period of time, and during this decade they arrived at a settlement of the Cushman Dam; part in thanks to the trust developed through the estuary restoration efforts. This success relieved barriers to cooperation between partners in the watershed. Maybe it was the sight of fish immediately moving into habitat previously isolated, or that the basketball court on the Skokomish Reservation was relieved of flooding, or the stories told by school children describing their experience visiting the estuary.

Also during this time; the US Forest Service, with input from Skokomish Watershed Stakeholders, developed and implemented a stewardship project that used the proceeds from a timber harvest to reinvest in restoration of the Skokomish. This created a great deal of enthusiasm and excitement amongst stakeholders and led to the formation of a watershed collaborative known as the Skokomish Watershed Action Team (SWAT). SWAT continues to be an all-inclusive collaborative today. Members include landowners, producers, agencies, special interests, industries, etc.

The General Investigation and restoration plan development greatly benefited from the formation of SWAT. Rich was an active leader in SWAT, and helped the group review and comment on project alternatives and design alternatives being considered during the planning process. SWAT was the perfect forum for getting information out to the community, and for getting feedback back from watershed stakeholders.

The Skokomish General Investigation was completed in 2015.

Recently the Skokomish community and stakeholders suffered a major loss in the passing of Rich Geiger, but not before Rich saw the watershed scale restoration plan through to preliminary design, and not before he saw the restoration plan authorized by congress. One of the last big tasks Rich and I worked on together was the 2017 Floodplains by Design Application that would support continuation of this watershed scale effort. Rich and I were in the office, walking back and forth between our desks in stocking feet, getting food delivery from our manager (he promised us beer, but showed up with Dads) and writing our hearts out until very late at night.

Today, the many partners in the Skokomish are carrying forward Rich's compassion and motivation. Things are really coming together for the future of the Skokomish! I believe Rich is still helping us move forward through the tough times. His subtle and compassionate perseverance is paying off as historically unsupportive landowners are becoming the strongest advocates for this large scale and multi-benefit restoration effort.

Jason Ragan

Hello, My name is Jason Ragan and I appreciate this opportunity to tell you my story about the Skokomish watershed. You may have heard of the Skokomish river, the largest freshwater tributary to Hood Canal, and the one famous for salmon crossing the road during flood events. My family first came to the Hood Canal area in 1853, when my Grandfather's great Uncle arrived by steamship in what is now known as Union. My grandfather's relatives were prospectors and homesteaders, my grandparents ran a dairy farm on the same land. My uncle and my dad worked in the forest industry, I work in the shellfish industry, and my kids are showing interest in wildlife management and biology. I live in the Skokomish Valley and I am proud to be the 5th generation of my family to live there while raising the 6th generation.

Growing up in the Skok Valley was amazing. We would ride our bikes, play in the woods and on the river banks. One of the only rules mom had was that we had to wait for the truck traffic to come down from the logging camp before we could be out on the road. One winter, I was sitting in my third-grade classroom at Hood Canal school and the principal came on the intercom system and announced that all Skokomish Valley kids needed to grab their stuff and get on the bus to go home early due to flooding. The bus could not make it all the way to our house. My sister and I were dropped off at the Rose family home, and later that day we were picked up by the local fire department. We got piggy back rides and we rode home in a deuce and a half army truck. This was the first 100-year flood event that I remember. From that time on the flooding has continued to get worse, and more frequent. Eventually my parents sold our home to the county in the FEMA buyout program in the mid 90's.

For my entire life I have been following the story of the Skokomish watershed and learning about land use conflict, and management decisions that have led the watershed to where it is today. The farmland is a fraction of what it is before, once fertile fields are now marsh land, and many homes are gone forever. Every year I watch salmon cross the road, only to smell them rotting in the fields when the flood waters recede. I worked for the farmers that built the dikes, and I know the loggers that built the roads and cut the trees. Some of the loggers that took the logs out of the rivers are the very same people putting the wood back into the streams. All these people are hardworking and passionate about what they think should be done to reduce flooding. We live in a very fertile and productive valley, not only do we have corn, hay, and cattle, but we have a diverse cottage industry in the Skok Valley including a Wasabi farm, and even Olympic Mountain Ice Cream.

I am proud to participate in the restoration process as a member of the SWAT group (Skokomish Watershed Action Team), I currently serve as Chair of the board with the Mason Conservation District and am an active member of the Skokomish Grange. I have made the choice to be involved and keep myself educated about what is going on in the watershed. Some members of my community have not been as involved in recent years, primarily because of the years of conflict, studies, and inaction. I am hopeful that they will get involved again as on the ground work will help to ease the skeptics.

In 2006 I decided to build a home in the upper valley where the flooding is not a major problem, but the road to my house is sometimes impassable. I chose to build the house because this area is home to me, and a great place to raise my kids. I believe in the restoration process and the work being done by all the stake holders, including the Conservation District, the Skokomish tribe, the Forest Service, and the

Army Corp. It has been a longer and slower process than we were told in the beginning, but a lot great work has been done. My worst fear is that this process may stall out in the end like other efforts have done in the past. We have gotten the funding to complete most of the studies, we now need the funding to do the important part, the on the ground work. We are on the verge of doing some amazing environmental restoration work that will also have great benefits to the community and surrounding area. World class recreational opportunities, timberland, and farm land will once again be productive and safe for all to enjoy.

Snohomish River Cohort

Linda Neunzig – Snohomish County Agriculture Coordinator

It was early spring when my phone rang, it was a distraught farmer in the Skykomish river valley. Oh, she was angry, she was sad. No one would listen to her, no one cared. Her 100 year old family farm that was passed down to her from her parents was rapidly falling into the Skykomish River.

Every time the water went high her farm sloughed off, feet at a time. Last winter it was six times they experience it, each time losing more and more land. And, it wasn't just her farm, it was all of the farms along 3 ½ miles of the Skykomish! I told her I'd be out the next week and I'd like to see the other farms too.

As we stood along the banks of the Sky, she showed us the losses, where the shoreline used to be. You could see where the trees had fallen in place as the soil disappeared under its long roots. You saw and heard the sandy loam soils trickle down into the water as we stood there.

We walked the river frontage to the far farm noticing all the areas that had lost land to the mighty Skykomish.

That one day, that day changed everything for me. Chris, the owner of the dairy farm downstream stood along the bank of the Sky, he choked up and his eyes filled with tears as he spoke of his future. His land was disappearing so fast, how could he continue as a business? Each acre feeds a cow, each acre lost was a loss of an animal to his business. Would he have a farm to hand down to his children, would he be able to continue with his land disappearing so fast?

All of his milk goes to Seattle's Pike Place Market to Beecher's to make their award winning cheese, would he be able to keep his contract with them if he couldn't produce enough milk?

All of the 4H and FFA kids in the valley have come to Chris's farm to use their heifers to learn about showing, feeding, leadership and so much more. Would that opportunity for the youth in the valley continue if he can't keep going?

How could we help him? How could we help the other farmers? The river wants to move, it has its own mind.

This area is also vital to the Tulalip Tribes as habitat land, it was their wintering site where they once had a longhouse.

This land is special to so many. It would take a team to find the right approach to help Chris and his neighbors and we had the best of them, Terry Williams from Tulalip, Derek Sandison WSDA director, our county surface water experts, a consultant and engineer from NOAA. They all came together to see how we could help these disparate landowners.

These farmers know the river, they know their land. I asked each of them as we walked their riverfront “if they could do anything they wanted to save your land, and anything they wanted to save the salmon what would it be?” No one had ever asked them for their thoughts. As we walked and they all talked about the river I made notes about all the ideas.

Once back to the county we all came together again to place each of these ideas on the big map. Then our county river hydrologist and engineer took the ideas and tweaked them just enough into projects that were permissible. We were no longer looking at single spots and individual properties we were now looking at 3 1/2 miles of contiguous projects that would be truly impactful.

I’ve made many trips to these farms over the last year and poured over the maps looking for solutions. Each of these farmers have worked to put in habitat projects, they want our salmon to thrive but they also want to be able to farm.

I’m a proud member of the Samish Nation but I’m also a farmer passionate about keeping farmland in production and knowing we can provide food security for all of our neighbors. In the U.S. we lose 3 acres of farmland every single minute. Every inch of farmland is important.

What if we could do something different, a new approach to both?

There is a farm in the middle of the 3 ½ miles that is for sale, it’s already been sub-divided up into six building sites. That farm needs to be saved too, but not from the river but from development, we know pavement is forever! What if we thought outside of the box, it’s what we farmers do on a regular basis? What if we were to purchase that farm and if each farmer were to swap a habitat easement on their riverbanks for good, tillable farmland while preserving that farm forever? Could we mitigate for the lost farmland to the river by providing new farmland? Could it be done? Chris’s farm would remain whole, his dairy would continue on to the next generation.

Could we create 3 ½ miles of contiguous, protected salmon habitat? What if we thought of solutions in a different light?

As a government employee, a member of the Samish nation and as a farmer, my question to you is, what if?

What if?

Morgan Ruff – Tulalip Tribe

Our tiny rrv4 was packed to the top for a weekend away in Portland. It was a hot hectic Friday in August. My daughter Tilly was 15 months and we had squished her into her carseat with toys and activities for the drive. She was fussy and crying, agitated by the heat and messiness of leaving town. Within that crowded hot car my early pregnancy brain was in action. Those first few blissful months of foggy brain, emotional roller coasters, I think I might barf all over everyone, mixed with the urgency of work that

morning, despite the fact I was trying to start a vacation. I sat crammed in the passenger seat, hovered over a pile of papers that continually slipped off my lap, frantically talking on the phone. We at Tulalip had just realized we were \$800,000 short on funding for our highest priority multi-million dollar estuary restoration project. My husband eased the car out of the parking spot while I hunched over paperwork on my phone...and crunch – backed our car into a very fancy new white with gold trim Mercedes SUV. Ouch, things had just gotten real.

But this is the life of a coordinator. Our project was close to a million dollars short, we had to find the money quickly, and my husband just rammed a luxury SUV with his pregnant wife and 15 month old screaming child. Don't worry, we were all ok.

I work for the Tulalip Tribes and am part of the Snohomish Watershed team charged with coordinating the recovery efforts of our endangered salmon runs. The Snohomish estuary is surrounded by some of our nation's fastest growing cities. But despite this growth, we still have wild populations of endangered Chinook. They swim up our rivers, reproduce, but then the young vulnerable fish don't have a place to rest and grow. The slower river waters have been cut off with levees and dikes. Restoring the nursery ground of insect filled nooks and cranny's in the brackish estuary for our tiny juvenile fish is important to recovering these fish.

It's simple really, the idea is to raise them up in the nursery (estuary), send them on their way into the great unknown of the ocean and hope that the upbringing we've given them helps them not only survive but thrive. It's not unlike the role we play as parents.

With the projects coming online in the estuary we were on track to meet our restoration goals of about 937 football fields (1200 acres) worth of sinuous, mucky, beautiful salmon nursery.

I came onto the team of people working to advance Qwuloolt at the latter parts of the project. Qwuloolt had been underway for over 20 years. Looking back at pictures of the early days of the project, our project manager Kurt Nelson had a lot more dark hair and his babies were just being born. Now his babies were off in college and there's a bright balding spot on the top of his head. I didn't really think I would have much of a role, because after all, when you're so close to construction, what could go wrong? I'm not the project manager. I'm the type person who just knows people. I'm a connection builder. And the type of person who ultimately won't let "I don't think that's possible" stop her and instead asks "how can I"?

One day in August 2014, Kurt approached my desk with a very worried look. After a complicated explanation about technical elements of soil blending, the astronomical costs of winterizing, the constraints of the federal Army corps of engineers, he humbly said, I think we need an extra \$800,000 by the end of fall or else don't know how we'll breach the levee. My reaction, other than just wanting to give him a reassuring hug, was "its ok. We'll find the money, we are not going to delay any further" – and then I wanted to hurl, because, you know, I was pregnant and what crazy person says they can find close to a million dollars in a couple month window. I knew we could do it, because what funder wouldn't want to come to the rescue? Well, it was a bit more complicated than that.

During that hot car ride in August, on our way to Portland the traffic was terrible. My palms were sweaty, I focused through the crying baby and nausea, maybe from the car, maybe from the pregnancy.

A trip that should take 3.5-4 hours took 7. And as we slinked through traffic at Lewis McCord airforce base I continued my conversation on the phone with the agencies and people who control restoration funding. Kurt, Elizabeth, Jeanette, David, back to Kurt, Heather, Denise, Terry, Jim, and many more. I hashed out the details of the back and forth in a memo....which was then revised like a tennis match volley - back and forth. Different scenarios run, ideas presented and scratched, and finally the most crystal clear beautiful description of our very complicated situation.

When it landed in the lap of the State's salmon recovery funding board, the comments we got were alarming.

"Tulalip has a casino, why don't they just pay for it." "Why use tax payer money to pay for a change in the budget?"

It's a hard answer to give because it's the kind of question that makes me want to shake a person to wake up. We're trying to repair land that was damaged for 150 years by someone else, outside of our reservation boundaries, with partners who were also driving timelines and budgets often beyond our control. At Tulalip we put staff and considerable funds forward, (including \$300K of tribal funds to help meet the shortfall). But should it be the tribe's responsibility to pay in full for the damage to the treaty reserved resources in perpetuity? Isn't recovering fish a benefit for all people? I mean, who the heck decided to jump start the economy and increase the demand for every single dump truck in the vicinity therefore driving up the costs? These things just happen in the landscape of large restoration projects and are part of the evolution of learning how to manage and adapt to larger scale project budgets.

I often don't know how to describe what I do. After all, Kurt was the one in the hot seat to provide the facts and numbers before the Tribal Board and SRFB. So, what I really did was just talk to people. To explain, reframe, emphasize, strategize, again and again and then encourage Kurt to keep his eye on the prize and to reassure him that I've got his back.

As the exchange continued my belly continued to grow. There were fitful nights when the baby kicked and moved and I would dream about the day the Qwuloolt site was restored. We solved our funding shortfall in increments through memos and conversations, late nights and early mornings, being creative, and pulling on long standing relationships to make hard decisions.

On the day that we finally broke through the levee the following August of 2015, I left my newborn with a friend. It was the first time I had been separated from her for any period of time. It took hours for the orange excavators, framed against the blue of the sky to dig through the levee. A group of us gathered along the pilot channel, taking pictures, acting goofy, but we quieted as the levee thinned and the final scoop was removed. The waters flooding through that opening felt like the site breathing for the first time. It felt like I was experiencing the birth of a baby. The rush of the breath. The flow of the water. The feeling of relief and accomplishment and joy. The site bubbled alive.

Maybe it was because I had just birthed my baby, but when that water flooded in, I forgot about the pain of fundraising, the nights of worry, and the swollen feet and queezy tummy. I just wanted to do it all over again, just to feel that moment again of pure joy and the water flooding into the site.

Touchet River Cohort

John Foltz – Snake River Salmon Recovery Funding Board

I want you to imagine yourself walking over soft pine needles, as if in a dream, the fresh scent of organic material that signifies the arrival of spring assaults your nose – it's the dream you keep having in the middle of winter.

You hear the sound of a golden eagle over the dull gurgling of the water flowing off to your left. As you take another deep breath, you notice the smell of apple blossoms in the orchard just beyond the river.

There is no need to imagine this, it isn't a dream. You are on the banks of the Touchet River and the apple blossoms are in full bloom.

You look down at the river and see a patch of clean water rising out of a pool, colorful gravels shimmer in the weak morning light.

Wait?! A flash of silver... there! You didn't notice it at first because its size is completely out of context. A salmon! Not just any salmon, a king, a springer! What could be more Washingtonian than that? Apples and salmon amongst the evergreens! This place is none other than southeastern Washington!

And this could have been how the day had started out... if only I had been a little earlier, and less concerned with work. Indeed, we are on the banks of the Touchet River, and there is a large apple orchard in full bloom.

I'm a project coordinator for the local salmon recovery board, its 2013 and I'm meeting with an orchardist Dr. Abbas Sameh and his wife Judy. We are looking at the river bank, or what's left of it as it's disappeared over the winter and early spring. Dr. Sameh had previously worked to stabilize this bank in the past. Now all that remains is a long length of cable that has some material caught on it.

We look at what Dr. Sameh has in mind to fix the problem. It is a contractor's sketch. Literally on the back of a napkin. It depicts a few logs buried into the bank. We talk through this short term solution and I note that it could work for a little while, depending on river flows. We would likely be doing something similar again in the near future if that is how he wants to proceed.

I had been invited to this meeting by a college to propose an alternative option to the idea drawn on the napkin. Instead of a short term fix, constantly battling this river, I shared an idea of floodplain reconnection as a means to solve their problem for the long term. After continued conversation, they said they would give it some thought and get back to me.

As Judy developed a relationship with me and our project partners, she started to build a confidence and willingness to find a longer term solution. She served as a facilitator, communicator, translator, for and positive influence on her husband. Judy helped push the project forward with a broader vision. They agreed upon a project design that laid the foundation to move forward.

Let's fast forward to 2017. As fate would have it, Dr. and Mrs. Sameh sold their orchard and moved away. What initially seemed like a setback yielded a potential new partner. The new owner, Nolan Empey, is also an orchardist.

Nolan originally set out to raise apples on the entire acreage of his orchard, but through the process of purchasing the property finds that his water right doesn't cover the acreage he had thought.

While Nolan was adjusting to this fact, he also learned that the Umatilla Tribes and the Salmon Recovery Board were planning river restoration project along the North Touchet through his new property.

The Umatilla Tribe, as the project lead, is now working with Nolan and his neighbors to try and find ways to improve both river conditions and provide what the orchardists need. This is currently where the project stands, negotiations are ongoing but Nolan is willing to give up more than 7 acres of apple orchard to the floodplain and the river!

As you can imagine, this is just the preview to a great story currently unfolding. There is still lots of work to do. We currently have a design to implement a large scale project that benefits landowners, river habitat, and reduces flood risk in the town of Dayton just downstream.

When the work gets tough and roadblocks arise, just close your eyes and remember the smell the apple blossoms and the sight of that king salmon, it will give you the energy to push on.

Bill Warren

My grandparents came to Southeast Washington in hopes of a better life. They eventually purchased property on the North Touchet upstream of Dayton in the foothills of the Blue Mountains. That land allowed my grandfather to excel at what he knew best; farming. He raised a family and my mother was born on that land in 1926 and grew up along the North Touchet River. That river had flooded out so many folks in the early days that it had to be tamed. Bulldozers run by men determined to keep that river out of harm's way were the rule of the day. Huge amounts of material were moved to block that river and protect people's homes and farms. But for all the effort of these rugged folks, the river raged and washed away people's homes and dreams.

But you know something; people's dreams are harder to wash away than you might think. It seems like the entire history of this region is about holding back the destructive waters of the river. Year after year, people sweated and toiled to protect what was theirs. And year after year they had to rebound after the destructive floods once again took their toll. That was not easy to overcome and eventually my grandparents place was sold. It went through several hands over the decades until one day my parents bought the land that was previously my grandparents, and it is where I make my living today. I am an apple grower, rancher and farmer in the North Touchet Valley.

I have some beautiful Touchet bottomland. But the river still affects everything I do. We reinforce the dikes, yet the river washes the dike way. It only takes one small weak spot to create a big problem. We tried to give the river more room to move, but it wasn't enough. Sometimes, I wonder how we can do a better job protecting the land. Then I remember sharing this to an old high school friend I ran into a while back. He was manning a booth at a Farm Expo in Spokane. When I told him about the property my family purchased of the North Touchet. He explained that the River needs more space; it needs a place to spread and release the energy that comes from the channel corridor that the Neighbors created upstream. "Click", a light went on in my brain. That made sense. Although my ancestors did what they thought was right, and it was at the time, we are entering a different era. An era when we need to do something different than continually control the rivers' course. Perhaps my grandfather would shake his

head in disbelief- in this idea of letting the river run more freely. But he had common sense too, so maybe he wouldn't be so surprised.

And so it began. An odyssey of exploration: Dialogue and discovery with my friend from high school. I had no idea that that would lead me to where I am today. I have been on tours of nearby rivers where similar problems to what we have on the North Touchet have occurred in the past. Today folks are taking a different look at the river. They spoke about the many benefits from giving the river more space. They spoke about cooler, cleaner water and more of it when we need it the most. And how by giving the river space, we can benefit ourselves and people downstream. I met tribal representatives, and interested people. We started having tours on my land looking at the North Touchet River. We have signed commitments with the Tribes to draw up designs. We met with engineers. We helped with the grant applications. And we have had more tours than you can count. Now we have the Tribes and the local land trust working with us to get conservation easements in place to help us and the river.

Unfortunately, attempts to get the work funded suffered disappointments. There were suggestions that the scope of work wasn't big enough, and acknowledgement that reduced funding allocations had increased competitiveness to a score that yields funding.

But times change, attitudes change, ideas change, property ownerships change and of course, climate has always been changing. Our dreams endured through revision and interaction with one another.

We have initiated responses to address the concerns of the previous funders, acknowledging and addressing constraints of the designs and the landowners. The tribes have initiated new relations with an additional neighboring landowner, as well as confirming our commitment to recognize the needs of our neighboring landowners keeping firmly in mind the needs of creating habitat for fish, as well as addressing concerns of the City of Dayton. My goal is to secure funding for this project on the North Touchet with three landowners and the Confederated Tribes of the Umatilla Indian Reservation.

Today, I know that my neighbors who share the North Touchet floodplain also share the vision and enthusiasm shared of me and that high school friend decades ago at that Farm Expo booth in Spokane. We have progressed a long way from the spirit of homesteading my grandparents initially embraced as we look to move toward a more sustainable future for fish, for farms and for people.

Jerry Middel – Confederated Tribes of the Umatilla Indian Reservation

This journey begins on a miserable cold and wet February day back in 2010. I had just started working for the Umatilla Tribes in the Blue Mountains of se Washington State. On my first trip to the field office where I now live, the neighbor's three pit bulls attacked and wrestled me to the ground. I was the outsider, and they guarded their territory.

The Touchet Valley is the ancestral homeland of the Umatilla Tribes. Yet the Tribes are treated like relative newcomers. I know that sounds strange, and it is. Some locals seem suspicious of the Tribes intentions up here, and treat the Tribes like outsiders. To break that cycle, we have to reach out and establish trust. And we do that by getting out into the community and explaining the Tribes' vision of rivers and uplands.

I am the live-in onsite project manager for an 11,000 acre wildlife area. Running the wildlife area is a dream come true and fits my personality like a glove. But that's only half my job. The rest of the time I look for private landowners along the Upper Touchet Rivers willing to work collectively with the Tribes to restore rivers. This part of the job is less like a well fit glove and more like wading into murky waters.

Trying to clear the waters means organizing meetings, tours, and more meetings. That kind of outreach translates into finding folks interested in river work. Then we arranged agreements with folks that owned property on the North Touchet River and wanted to work with the Tribes. Agreements set the stage for grant writing and project planning. Planning led to community involvement which in turn meant meeting more folks. It looked like we were on our way to a successful project. We got the grants and matching support. Then like migrating steelhead struggling to make it up the Columbia River, we had setbacks. The landowners pulled out. Talk about a passage barrier. I gave back the \$450k grant money. It was 2014.

I stood under tall black cottonwoods wondering how we could get a project off the ground. I had to meet someone who was willing to let us on their property to restore the river. I met Bill Warren: apple farmer, rancher, and a lifelong resident of Columbia County. Bill expressed interest in creating fish habitat. I wasted no time obtaining funds to start a design along Bill's and his neighbor's property just upstream. It was winter of 2015.

Snowflakes fell one by one building the snowpack, as we made incremental progress on the designs and landowner negotiations. Meetings and tours led to grant writing and project planning. Once again, success seemed in reach. Then as the snow gave way to the spring song of the chickadee, Bill Warren's upstream neighbor sold his orchard. It was April of 2017.

Yakima River Cohort

Peter Dykstra

My name is Peter Dykstra. I am a water rights and land conservation lawyer and work on those issues in the Yakima River Basin in Central Washington. First, a confession: I am a "206er". I live in Seattle with my family and my office is in Seattle; 206 is our area code. "206er" has a certain, less than desirable, reputation on the other side of the mountains. Although the Cascade Curtain isn't what it once was, it is still rare to find people from Seattle working in the Yakima Basin, certainly not as much as I do. Why then do I drive a couple hundred miles at least twice a week to work in such a place?

Once upon a time, the Yakima Basin was pretty much a farming community. If you owned land in the valleys and along the rivers, basically anywhere close to water, you used that land, with the water from the reservoirs and rivers to grow hay. For over 100 years, farming families throughout the Yakima have cared for this land, made a good living from the land, and raised the next generation of family members who carried on that legacy.

In recent years, farming has become more challenging for many, especially those farmers who owned marginal farm ground along the rivers and stream of the Upper Yakima Basin. Recurring flooding of the farming ground caused catastrophic losses of crops. Massive spring runoff sent loads of debris crashing into the fences and tore out the infrastructure needed to bring water to the farm to irrigate the crops.

Changing regulations created consternation about what farmers could do on their land. Pressure to grow homes instead of crops from the growing cities nearby increased the challenges of maintaining the land as a farm. Many in the next generation of the farming families began moving away and aren't coming home to keep farming. These farmers are constantly contacted by developers about selling their land for development. Many of families need the money for retirement; their land is their nest egg.

I am not your typical lawyer. I don't spend my days in court, arguing with some "other side" or trying to place blame for a problem on one party or another. I like to solve problems, particularly problems that involve our water and land. It so happens that I am lucky enough to be a lawyer for two organizations that work to offer another way: The Trust for Public Land and Trout Unlimited. TPL and TU are conservation groups who work with willing landowners to purchase their land and water rights at fair market value but put those assets into public ownership for habitat and other benefits. Together with these two great organizations, I work to find a way to pay farming families what their land and water is worth, even to a home developer, but have the land be used for floodplain restoration and the water left in the rivers and streams for fish.

Because of that work, in one part of the Yakima Basin, known as the Ringer Loop, I am helping TPL and TU work with several farming families and many partners in the Yakima Basin Integrated Plan to purchase several hundred acres farmland and water rights from the farming families that are ready to sell. Together these partners are working to cobble together nearly \$10 million from multiple funding sources to buy these farms and restore their floodplain functions.

Because of that, I get to help farming families find a pathway to make the decision to sell their farm without sacrificing their financial needs or compromising their hope that land will grow something better than more homes, all while protecting land for future generations to enjoy as open space and wildlife habitat.

Together with groups like TPL and TU, I work in the Yakima Basin because I am working to build a better future and a resilient community in the face of ongoing change. And maybe just maybe I am one 206er helping to pull back the Cascade Curtain just a bit further.

Urban Eberhart – Kittitas Reclamation District

Hello, I am Urban Eberhart. I grew up farming and irrigating in the Badger Pocket area of the Kittitas Valley. I manage the Kittitas Reclamation District and represent irrigated agricultural interests on the Yakima River Basin Water Enhancement Project Workgroup. I am here to tell you a story about the river that is the life of our area.

Setting Up for Survival – A River Basin Endures

A long time ago, but just a moment in the memories of earth, the land walked through the seasons with steady strides in a place now known as the Yakama. In winter, a thick blanket of snow and ice lay across the mountain ranges and covered the valleys below. The warmth of spring and summer melted the snow little by little. Water soaked into the flat places and trickled down rocky cliffs, waking seeds and dormant roots, bringing meadows into bloom, nourishing animals, and gladdening the hearts of people. And so it happened year after year. Mountains held their snow pack into summer with the promise of cool water for when the sun shone long and hot across the arid land. Cold water flowed steadily

through streams and ever larger rivers. Fish journeyed to the ocean and then finally back to the headwaters to spawn, as it was in their nature to do.

One day, it so happened that people arrived with a great desire for more water to support farms and families new to the land. Forests were cut and cleared; rivers were dammed, with little consideration for how fish would find their way to and from their homes at the furthest edges of lakes and streams. When the rains came, instead of soaking in, it swept off the steep, treeless slopes taking with it everything in its path. Roots lost their grip. Meadows were ripped open in great gaping bites. The ground baked. Streambeds lay empty or carried water too warm for the fish, who had thrived there for so long.

When the winter snows and summer rains failed to appear, people started to fight over what water was left. No matter how hard they fought with each other, there was never enough to go around.

It so happened that one day a small group got together. They were seasoned adversaries and equally matched. They told each other, "We're not getting anywhere. We're doing a great job of tripping each other up. But nothing is being accomplished." They concluded the problem could not be solved by continuing to fight. A plan was needed for everyone's survival – families, farms, fish, and forests. It was all connected. The first meeting was difficult, as mistrust and wariness had long prevailed. Yet, each of the former adversaries were heartened and returned to their people in order to gain support for this new approach.

They were able to gather together a much larger group and called it -- the YRBWEP workgroup. Over time trust grew. Anger and bitterness seeped away as the entire team tackled each of the concerns with respect and civility and shared meals. Team members, now friends, could be relied upon to care about more than just their own narrow interests. The group made a plan to create fish passage at creeks and dams, cool the overheated waterways, repair damaged forests and eroded streams, and create more water storage for all. It took many years and many steps to move along this new path. Envoys were sent to seek outside help with their tasks and soon word of their efforts spread to other lands.

The group now shares the story of the Yakima Basin Integrated Plan, bringing hope to others who face similar troubles. And all the while those from generations before and those who have yet to be born wait patiently for the fish to come back. It has begun. Forests grow, meadows heal, wildlife returns, and farms flourish.