

# Joint ASRP Science and Implementation Workshop

June 20, 2024



## Contents

Executive Summary .....	2
Spring Chinook .....	3
Wetlands/Oregon Spotted Frog (OSF) .....	7
Olympics .....	12
Estuary.....	16

# Executive Summary

This report documents the discussion and outcomes from the joint ASRP Science and Implementation Workshop on 6/20/2024 at the Montesano City Hall. This workshop was attended by 52 people representing over 20 organizations working in the basin, including the ASRP's Regional Implementation Team (RIT) members, Technical Advisory Group (TAG) members, Chehalis Basin restoration and research partners, and other supporting staff.

Most of the workshop consisted of focused breakout discussions on four types of project “clusters” with 8-15 people participating in each group:

- **Spring Chinook and Cascades**
- **Wetlands and Amphibians**
- **Olympic Mountains and Cloquallum**
- **The Grays Harbor Estuary**

There were three primary goals for this workshop:

- **Goal 1:** Identify new ways and reinforce existing ways that ASRP funded research informs project prioritization and design.
- **Goal 2:** Identify which project development and design projects are likely to request implementation funding by the end of this biennium (June 30, 2025).
- **Goal 3:** Determine if sufficient capacity exists to implement all envisioned project work, and if not, identify capacity gaps and capacity building opportunities.

A post-workshop feedback form found that workshop participants generally felt that while progress was made towards all three goals, the second goal regarding project identification was the most successful. Between \$20 million and \$40 million worth of projects were identified that could potentially seek ASRP funding before the end of biennium.

Additionally, a requirement of between \$25 million and \$75 million for other projects was identified for the early 2025-27 biennium. These project lists will help focus future conversations on ASRP priority areas, increase the scientific basis of project design, and increase the likelihood of future restoration project success.

Immediate next steps recommended by this workshop include the ASRP facilitating additional discussions on each project cluster to continue to foster collaboration between researchers and project implementors. Filling existing capacity gaps and the possibility of federal funding proposal will naturally build on these future discussions in the clusters.

This report summarizes the discussion from each project cluster. These discussions could result in future actions, but do not currently represent any official ASRP decisions or policy.

# Spring Chinook

## Participants and Content

Name	Org	Role
<b>Julie Grobelny</b>	WDFW	ASRP Facilitator
<b>Katrina Sukola</b>	ICF/ Flood authority	FA Staff
<b>Bob Russell</b>	Lewis County Citizen Rep	Resident/Partner
<b>Alex Gustafson</b>	Trout Unlimited	Sponsor
<b>Chris Volmert</b>	Lewis Public Works	Sponsor
<b>Kayla Low</b>	Lewis Public Works	Sponsor
<b>Karin Strelhoff</b>	TCD	Sponsor
<b>Joey Burgess</b>	TCD	Sponsor
<b>Tara Livingood-Schott</b>	Chehalis Tribe	Practitioner
<b>Bob Amrine</b>	LCD	Sponsor
<b>Larry Lestelle</b>	Biostream Environmental	TAG
<b>Olivia Williams</b>	USFWS	TAG
<b>Marisa Litz</b>	WDFW	TAG
<b>Lea Ronne</b>	WDFW	Study Lead
<b>John Winkowski</b>	WDFW	Study Lead
<b>Mara Zimmerman</b>	Coast Salmon Partnership	Science Partner

### *Study Posters:*

- Spring Chinook Hybridization and Skookumchuck Flow Manipulation (WDFW- Marisa Litz)
- Stream Temperature and non-native fish (predation and climate change) (WDFW- John Winkowski)
- Newaukum Fish in, Fish Out (WDFW- Lea Ronne)

### *Project Posters:*

- Satsop and Newaukum Connectivity (CNW)
- Upper Basin Knotweed (Lewis CD)
- Newaukum RM 8-9 (Lewis CD)
- Newaukum Lawson Reach (Lewis CD)
- SF Newaukum RM 14-20 Project Development (Lewis CD)
- SF Newaukum RM 14 (Lewis CD)
- Newaukum Wood Placement (TU)
- Riverbend Ranch (TCD)

## Goal 1 – Science & Implementation Interface

### *Spring Chinook Hybridization*

- While more overall Spring Chinook spawn in the Skookumchuck compared to the Newaukum, there appears to be greater hybridization within the Skookumchuck potentially due to managed flows associated with the Skookumchuck Dam.
- Currently unclear how hybridization issues can (or even should) be addressed through habitat restoration projects.

### *Cascade stream temperature:*

- Summer cold water refugia identified by TAG as key issue for Spring Chinook
- Sponsors were encouraged by TAG to conduct a geomorphologic study of the basin to determine areas where ELJ-type projects are most likely to form the types of scour pools associated with cold water refugia.

### *Bass + predation:*

- Smallmouth bass are present in basin and prey on chinook salmon- likely to become more severe with climate change, as bass prefer warmer waters.
- Sponsors were encouraged by TAG to consider the presence of predator species when developing projects. Developing projects in certain areas could result in increased predation on Spring Chinook. This analysis should be included in project application materials.

### *Fish-in fish-out:*

- Spring Chinook spawning location data is available for the Newaukum watershed for the past few years. Evidence that extreme events such as heat domes and flooding negatively affect chinook survival at all life phases.
- Sponsors were encouraged to use this information when developing projects in locations that would result in cooler water temperatures in spawning and rearing reaches.
- Sponsors were encouraged to assess the Cascade ecoregion to identify locations for projects which provide refugia from extreme events. This could include side channel or floodplain access. Additionally, sponsors should develop projects which reduce the severity of the impacts of the events, for example extreme sediment movement (during floods) needs wood to arrest extreme movement and maintain gravel beds.

## Goal 2 – Project Identification and Development

### *2023-25 ASRP projects*

- \$6-8 million worth of near-term priority projects were identified.

- The largest of these projects are the implementation phases of reach scale projects on the Newaukum River sponsored by Lewis CD.
- Smaller projects include project developments on the Skookumchuck, barrier corrections sponsored by Thurston and Lewis counties, and wood placement assessments.
- An additional \$6-7 million funding need was identified for a Port Blakely Tree Farm acquisition sponsored by Capitol Land Trust. This project is not fully matched to ASRP priorities and would need supplemental funding.

#### *2025-27 ASRP projects*

- Less than \$1 million worth of ASRP near-term priority projects were identified in this workshop for the next biennium.
- Potential for large-scale wood placement implementation projects in the upper Newaukum, contingent on the current wood assessment projects sponsored by TU.
- Potential for a larger project on Coal Creek sponsored by Lewis County residents (and potentially American Rivers). This is outside of ASRP near term areas, but it could benefit from supporting funding and project management.

#### *Potential future opportunities and project developments*

- Potential project development looking at habitat protection in the upper Chehalis for coastal tailed frog (Lewis CD)
- Potential for Capital Land Trust to start requesting project development funding for acquisitions/protection
- Potential to incorporate more community outreach, and education into projects.
- Water rights was identified as having a long term impact on limiting factor of stream flow and temperature. Results of the Washington Water Trust analysis and project development could result in more project opportunities to promote more in-stream water in increasingly hot and low-flow summers.

#### *Federal Funding Discussion*

- Securing long-term federal funding would be useful to build organizational capacity for sponsors working on spring Chinook projects
- Lewis Public Works and Trout Unlimited both expressed interest in participating in further discussions on federal funding
- The implementation phase of large wood placement projects, the Coal Creek acquisition project, and the Port Blakely Tree Farm project were all identified as candidates for federal funding.

## Goal 3- Capacity

- Overall, less progress was made towards overcoming sponsor capacity constraints. Some potential partnerships include:
  - Bob Russell working with American Rivers on the Coal Creek project
  - Lewis CD working with Capitol Land Trust to coordinate on acquisition projects on the Newaukum and Upper Chehalis
- There is still a need to overcome some capacity constraints, including:
  - Developing an outreach plan to promote spring Chinook topics such as poaching and the impacts of recreating in thermal refugia reaches
  - Developing a Chinook-focused federal funding package of restoration projects
  - Implementing project opportunities identified by Lewis CD that they currently do not have sufficient staff to implement.

## Key Takeaways and Near-Term Action Items

- The Spring Chinook cluster had the largest number of participants and potential future projects out of the four clusters discussed at this workshop. This is an area of high interest for both the Regional Implementation Team and the Technical Advisory Group.
- This group expressed interest in focusing future conversations on using research study outcomes to inform project development and design. In particular:
  - Siting restoring projects to avoid the negative impacts of predation on Chinook from non-native species
  - Siting and design ELJs so that they maximize thermal refugia
  - Identifying locations which provide refugia from storm or high temperature events
- Need for future discussion around a curated tracking system that would identify parcels that were for sale throughout the basin and would be accessible to partners in the basin in order facilitate collaboration on protection and acquisition opportunities.
- Sponsors also expressed an interest in continuing this discussion with a similar set of participants. Future discussions could focus on:
  - Identifying organizations to sponsor the key project development needs discussed in this meeting, such as
    - Mainstem Newaukum River
    - Protection Projects
    - Coastal Tailed Frog Protection
    - Resident Outreach

# Wetlands/Oregon Spotted Frog (OSF)

## Participants and Content

Name	Org	Role
<b>Karl Veggerby</b>	Anchor QEA	Facilitator/notes
<b>Kirsten Harma</b>	Chehalis Basin Lead Entity	Steering Committee/ Sponsor/notes
<b>Karin Strelloff</b>	Thurston CD	Sponsor
<b>Daniel Trovillion</b>	WDFW	Study Participant
<b>Teal Waterstrat</b>	USFWS	Practitioner
<b>Michelle Tirhi</b>	WDFW	Sponsor
<b>Bryan Benjamin</b>	Thurston County	Practitioner
<b>Gabriela Dunn</b>	Washington Water Trust	Sponsor
<b>Colleen Parrott</b>	Chehalis Tribe	Steering Committee
<b>Lisa Hallock</b>	WDFW	Practitioner
<b>Adrian Frediani</b>	WDFW	Practitioner

### *Study Posters*

- Wetlands / Black River / Oregon spotted frog (WDFW – Julie Tyson)

### *Project Posters*

- Black River, Cascade Mountains, and Willapa Hills Water Use Strategy (WWT)
- Proposed Chehalis Mainstem Habitat Node at James Road (Thurston Conservation District)
- Scatter Creek Local Strategy (Chehalis Basin Partnership)

## Goal 1 – Science & Implementation Interface

### *Study ideas that would help project implementation and siting:*

- Macroinvertebrate and substrate transplant idea: Can materials from an undisturbed pond be transplanted into a new pond to help kickstart the food web? There was a study performed during stream restoration work in Seattle's Thornton Creek that transplanted sand and gravel from reference sites to attempt to kickstart the macroinvertebrate and microorganism food web.
- There was a proposal to either initiate a new study or perform a literature review on Oregon spotted frog studies focusing on Oregon spotted frog preferences for water depth, topography, vegetation, and benthic substrate to inform project design.

- WDFW is working with Northwest Land and Water Inc., and Earth FX Inc. on a Black River hydrologic model to identify areas that are likely to stay cool and have good flow under future climate change scenarios. Those areas would then be prioritized for future acquisition/protection/restoration. Model will also help point to site-specific actions to boost cool water and flow. There will likely be an ASRP funding request to help fund this effort.
- From WDFW amphibian staff - Washington Water Trust should expand its water rights identification and outreach program in additional subbasins where there is important OSF habitat: Salmon Creek; Allen Creek; Mima Creek.
- From WDFW amphibian staff – proposal to create a “bullfrog program” to address knowledge gaps for project implementation. How can projects be modified to address bullfrog predation? Would modifying depth and temperature help reduce predation by bullfrogs?

*Additional science needs:*

- Proposal for a BDA-focused study to examine how reed canary grass affects water quality when water levels rise behind BDAs. Does reed canary grass inhibit water quality improvements from BDA construction?
- How to design a project that benefits both salmon and frogs?
- Further study of sub-basin hydrology, including water quantity and quality monitoring, to understand where there will be cool, flowing water under climate change.

## Goal 2 – Project Identification and Development

*2023-25 ASRP projects*

- Approximately \$5 million dollars’ worth of project funding was identified as possibly being requested in the 2023-2025 biennium.
- The largest projects that may come up this biennium are the Cozy Valley full design and phase 1 construction (\$3 million), the Independence Valley Property acquisition (\$1 million), and the Black River hydrologic modeling effort (\$500,000) – this is an attempt to predict where cold water refugia will persist within the Black River watershed under future climate change scenarios. This effort is intended to inform acquisition by locating areas of high importance for protecting, as well as guide site-specific restoration actions to improve predicted hydrologic properties that are desirable for OSF and other amphibians. Some work could start on TCD’s James Road Node project to be designed in the following biennium.



### *2025-27 ASRP projects*

- Approximately \$17 million dollars' worth of project funding was identified as possibly being requested in the 2025-2027 biennium.
- There are major acquisitions that may be proposed over the next few years. The Black Hills Conservation Easement (cost TBD), the Cooke water right purchase and construction (\$7.5 million), water rights acquisitions in Thurston County (\$2 million), Salmon Creek property acquisition (\$1 million), pond construction in Allen Creek (\$100,000) and the James Road Node project design (\$450,000).
- There will likely be some project concepts coming out of the Scatter Creek local strategy that will be ready for design during this biennium (\$1 million).

### *Potential future opportunities and project developments*

- Thurston Conservation District is planning to do further project development in the Scatter Creek basin in the next several years. They may also take on a project related to community perceptions around human-beaver interactions as a stepping-stone to reintroducing beaver into these areas.
- WWT will likely expand its water use strategy assessment to other areas, continuing project development around water quantity improvements.
- There are several smaller possible acquisitions, along with outreach and management projects aimed at raising public awareness around key wetland issues and bullfrog control.
- The Black River hydrologic modeling effort (listed as 23-25 biennium request) is a project development request.
- Thurston County Community Development staff are interested in becoming an ASRP sponsor to pursue water acquisition, streamflow augmentation, and managed forest acquisition projects.
  - Forestry land acquisitions in Thurston County could be about \$4 million, however no specific properties have been identified.

### *Federal Funding Discussion*

- Federal funding would be beneficial for Oregon spotted frog projects. Practitioners are concerned about permitting challenges that arise from a "federal nexus" to funding because federal dollars require ESA consultation which can be a time consuming and difficult process.
- Interest in Federal grant if someone else manages aspects that biologists often do not have experience with (grant writing, permitting, ESA consultation, etc.). Funding a full-time position to help navigate permitting for restoration projects in this area could alleviate these issues.

## Goal 3 – Capacity

- The lag time between landowner outreach and acquisition is a capacity bottleneck that could lead to lost acquisition prospects. More dedicated staff time could reduce this lag time.
- WDFW needs additional capacity in the early stages of projects – permitting, cultural resources etc. Biologists are asked to wear a lot of different hats, and they are often not equipped for these initial tasks. Permitting and cultural resources are areas where consultants could be useful.

### *Challenges to increasing capacity:*

- Thurston Conservation District works in multiple basins, and thus goes after different grant programs. There are uncertainties associated with funding full time staff using a combination of funding sources. Piecing together staff positions using multiple funding pots, each with different objectives, is challenging.

### *Solutions to improve capacity:*

- Bringing on a consultant to help with WDFW OSF projects was recommended. The biologists would prefer that visioning for the project, and project management be by in-house biologists. A good use of consultant time would be in permitting, cultural resources, and other project support roles. An ideal consultant is a person that works in the basin, learns whom to talk to about permitting needs, and coordinates obtaining permits.
- Proposal for a Thurston County staffer to facilitate permitting for environmental projects – someone who could help connect sponsors with the right people at the county to get their permits through.
- Ducks Unlimited is a good sub-contractor for wetland/amphibian projects. They could take the role of helping with permitting, design, and engineering.
- NRCS staff is increasing in Western Washington. They may be able to add capacity to efforts such as landowner outreach, etc.
- Staff from Thurston County Community Development are interested in becoming an ASRP sponsor to pursue water acquisition, streamflow augmentation, and managed forest acquisition projects.
- To improve process for acquisitions: could we assign value to species/ecosystem services in easements to increase the value of that easement? This would incentivize landowners to sell their unbuildable wetland easements for conservation purposes.

### *Coordination ideas:*

- WDFW amphibian acquisition specialist and Washington Water Trust water right staff should work together. There are benefits of pursuing fee title and water rights together.
- Ducks Unlimited is willing to provide support on multiple projects.
- Coordination is already happening in Scatter Creek as part of the CBP's Scatter Creek subcommittee. This is a great model that could be expanded to the Black River as well.

### **Key Takeaways and Near-Term Action Items**

- This region needs further study of sub-basin hydrology, including water quantity and quality monitoring, to understand where there will be cool, flowing water under climate change. This information would help prioritize where to do habitat enhancements for fish and frogs.
- Land acquisition is a critical near-term action item: the lands OSF need for reproduction and movement are very limited. Land acquisition was also identified as a need for completing large scale restoration projects in the Scatter Creek headwaters.

# Olympics

## Participants and Content

Name	Org	Role
<b>Cynthia Carlstad</b>	NHC	Facilitator/notes
<b>Mack Hunter</b>	GHCD	Sponsor
<b>John Stepanek</b>	GHCD	Sponsor
<b>Reed Ojala-Barbour</b>	WDFW	Study Lead
<b>Jane Atha</b>	WDFW	Study Lead
<b>Aimee McIntyre</b>	WDFW	Study Lead
<b>Daniel Trovillion</b>	WDFW	Study Lead
<b>Caprice Fasano</b>	QIN	Practitioner
<b>Jacob Murray</b>	Mason CD	Sponsor
<b>Adrien Owens</b>	Conservation NW	Sponsor
<b>James Blacklaw</b>	Conservation NW	Sponsor
<b>Alex Gustason</b>	TU	Sponsor

### *Study Posters*

- Olympic Mountains Overview
- Olympic Mountains Summary of Monitoring – Project Effectiveness, Status and Trends, Key Learning & Considerations for Project Sponsors

### *Project Posters*

- Middle Humptulips Outreach and Project Development (Mack Hunter, GHCD)
- East Fork Satsop – Schafer Park Concept Design (Jacob Murray, Mason CD)
- ASRP Project Development: Cloquallum GSU (John Stepanek, GHCD)
- Satsop and Newaukum Riparian Connectivity Strategy (Brian Stewart, James Blacklaw, Adrien Owens, Conservation NW)

## Goal 1 – Science & Implementation Interface

### *Science topics that sponsors want to understand better:*

- Restoration strategies for non-salmonid species (like Eulachon)
- Amphibian habitat improvement with headwater projects – what is needed for protection/restoration?
- Planting choices for riparian areas to foster riparian connectivity

- More specific planting guidelines, especially with an eye toward future climate
- Invasive plant species control for amphibian habitat improvement, especially reed canary grass
- What is the ideal treatment density/spacing for instream/floodplain projects to get desired habitat benefits?

*Data accessibility:*

- Locations of spawning index sites and spawning site data should be more accessible to sponsors. This is important for attempting to avoid disruption during construction of restoration projects and should be available during project development and design.

*Scientist-Sponsor-Landowner coordination that would be helpful:*

- Assistance with identifying and minimizing disruption to spawning beds from ELJ installation
- Scientists would like to partner with project sponsors to monitor and test physical response to treatments; this could help refine techniques in a more dynamic way, adding knowledge in addition to formal monitoring studies.
- Some landowners (particularly managed forest landowners) are interested in partnering on monitoring BDA outcomes. They have shown more willingness to have projects sited on their land when monitoring is part of the project.

## Goal 2 – Project Identification and Development

*2023-25 ASRP projects*

- Approximately \$7 million dollars' worth of project funding was identified as possibly being requested in the 2023-2025 biennium.
- The largest projects that may come up this biennium are the Satsop 0-2 (implementation) and Still Creek (final design) projects.
- Other projects anticipating funding requests include Conservation Northwest's Riparian Connectivity project, Cloquallum RM 3.8-6 (GHCD), Middle Fork Wildcat Creek, Middle Fork Humptulips Planting (GHCD), Decker Creek Side Channel Construction (Mason CD), Dry Bed Creek, Cloquallum LWD RM 17, Decker Creek RM 13 LWD (Mason CD), Dry Creek Barrier Correction Final Design (TU), and Decker Creek RM 12.5-14.0 Design (TU).

### *2025-27 ASRP projects*

- Approximately \$18.5 million dollars' worth of project funding was identified as possibly being requested in the 2025-2027 biennium.
- Major projects expected to be ready for construction include the Dry Creek Barrier Correction (TU), Decker Side Channel Construction (Mason CD), East Fork Satsop Schafer (Mason CD), Wynoochee RM 34-36 (GHCD), Satsop RM 0-2 (GHCD), and Still Creek (GHCD).
- The Quinault Indian Nation is currently working on 90% design on an unnamed tributary to Stevens Creek with Climate Commitment Act (CCA) funds. Additional funding could be needed, and they are targeting construction in 2026.

### *Potential future opportunities and project developments*

- GHCD, Mason CD and the Quinault Indian Nation have GSU-based project development efforts underway in the Cloquallum, Middle Humptulips, and East Fork Satsop areas. These are likely to result in the identification of additional projects in those areas.
- Conservation Northwest's Satsop and Newaukum Riparian Connectivity Strategy is likely to span multiple years as they work with landowners to site projects.

### *Funding Discussion*

- Overall, sponsors are not currently tapping into federal funding but would like to. The Satsop RM 0-2 project has applied for NFWF NCRF funding and expects to learn the outcome of this proposal in November 2024.
- Washington Conservation Commission Salmon Recovery funding was noted as a potential funding source for longer-term post-project monitoring. Skagit CD is thought to be using this funding.
- There is an Inflation Reduction Act RCPP funding program that could be tapped for large-scale riparian / land management work. This could potentially be used for work with managed forest landowners.

## **Goal 3 – Capacity**

Overall, the organizations in this group reported that they have adequate capacity for the work they want to do.

### *Challenges to increasing capacity:*

- Organizations such as Conservation Northwest that haven't traditionally served as sponsors for major restoration projects face challenges with how to communicate and justify the need for staff resources for this work.

#### *Solutions to improve capacity:*

- Attracting the right candidates when hiring can be difficult. Participants reported that it is necessary to offer competitive salaries as applicants are comparing job offers.
- Participants also reported success with hiring at a more junior level then ultimately needed, with the intent to mentor and train. For applicants looking for upward mobility and skill development, this is a selling point.

#### *Coordination ideas:*

- Grant writing support was identified as very helpful.
- Coordinating training/mentoring in construction management and project management (particularly shepherding a project to construction) would be very helpful to sponsor organizations.
- The ASRP is a complex program with many partners, and it can be challenging to navigate through the different personalities and partners who are involved. Assistance with this, particularly for newer partners, would be helpful.

### **Key Takeaways and Near-Term Action Items**

- This region benefits from having a well-established group of project sponsors who understand the ASRP "human ecosystem" and how to work within it to develop and implement projects. Continuing to support those sponsors while additional sponsors advance project developments will continue to produce good results.
- There are opportunities for better scientist-sponsor-landowner engagement to test restoration techniques (such as different approaches to riparian plantings) as projects are implemented. This could accelerate adaptive management knowledge building, and lead to more effective restoration approaches basin wide.

# Estuary

## Participants and Content

Name	Org	Role
Victoria Knorr	WDFW	Facilitator
Jennifer Lewis	OCB/Ecology	Facilitator
Anthony Waldrop	GHCD	Sponsor
Regan McNatt	FWS	TAG
Katrina Sukola	ICF	CBS - Flood Authority
Olivia Williams	FWS	TAG
Greg Green	DU	Sponsor
Noel Sharp	DNR	Steering Committee
Mark Mobbs	Quinault	TAG
Lee First	Twin Harbor River Keepers	Partner
Carlo Abruzzese	DNR	Sponsor
Jacob Baker	Coastal Interpretive Center	Partner
Olivia Britton	GHCD	Sponsor

### *Study Posters*

- Estuary Overview

### *Project Posters*

- Chehalis RM 15.5-17.5

## Goal 1 – Science and Implementation

No existing monitoring studies funded through ASRP (see the 2023 reports from each of these studies [here](#)) currently collect data in the estuary, but several ideas for new studies have been proposed through the Technical Advisory Group (TAG), informed by conversations with project sponsors and partners that occurred at this workshop and leading up to it. These proposals are currently under consideration in the ASRP Steering Committee for potential funding in the 2025-2027 biennium and they are described below.

### Proposed New Studies

#### *Salmon diet and prey availability in estuarine habitats of Grays Harbor*

Assess salmon prey abundance in different estuarine habitat types and locations within the Estuary Ecological Region and quantify relative importance of major taxonomic groups in salmon diets for a variety of life phases.



### *Spatial and genetic distribution of eelgrass in Grays Harbor and seed-based planting strategies*

Update the distribution of eelgrass (*Zostera marina* and *Z. japonica*) in Grays Harbor and its relation to sediment characteristics. Investigate *Z. marina*'s reproductive strategies and genetic structure relevant to conservation and restoration. This will be addressed through mapping distributions of *Z. marina* and *Z. japonica* in Grays Harbor based on ground validation of remotely collected imagery; concurrently collecting sediment for comparison with historic samples; testing several low-tech seed collection methods, that do not involve cold or tank storage; and evaluating genetic relationships of annual and perennial *Z. marina* within Grays Harbor, in the context of an existing genetic map of eelgrass in Washington state.

### *Monitoring Migration Behavior and Estimating Survival of Juvenile Salmon and Steelhead Outmigrating from the Chehalis River*

The study will monitor juvenile salmonid migration behavior and estimate survival from WDFW rotary screw traps (RSTs) located on the mainstem Chehalis River near Rochester and Rainbow Falls, and the mainstem Newaukum River, to the exit of Grays Harbor using acoustic telemetry. Target species include Chinook and coho salmon and steelhead.

Information on migration timing and survival through Chehalis River reaches and the estuary will quantify overall survival among study reaches and identify mortality zones. This will inform salmon and steelhead trends in the basin and ASRP prioritization decisions among Ecosystem Diagnostic Regions (EDRs). Information on estuary survival can be incorporated into upcoming modeling of ASRP elements using life cycle models (EDT and NOAA's habitat model).

### **Workshop Discussion Notes (Goal 1):**

- Important to understand Spring Chinook (focal species) limiting factors pertinent to the estuary and tidal reaches
  - Rearing and off-channel habitats in surge plain and tidal reaches
  - “stepping stone” opportunities along Grays Harbor shoreline to improve migration corridor
- Eelgrass distribution and genetics, to inform restoration opportunities, activities, and techniques
- Green crab monitoring
  - Can help protect eelgrass and other habitats
- Expressed desire to re-run and update the Wild Fish Conservancy's fish assemblage assessment from ~2015

- This could be \$200-400k for a 2-4 year study

## Goal 2 – Project Identification and Development

While some work to identify project and project development opportunities is already underway, this cluster has had less time over the development of the ASRP to establish a shared understanding of priority areas and actions within this ecoregion. As such, the discussion at this workshop is a few steps behind other clusters in terms of level of specificity. A concerted and sustained effort will move forward from this workshop to support on an ongoing collaboration of technical experts, project sponsors, and partners as they explore project development opportunities and seek federal and ASRP funding to implement them.

### *2023-2025 ASRP Projects*

#### Chehalis RM 15.5-17.5

- Surge plain project, GHCD
- Rapid channel migration, re-establish vegetation and slow erosion
- Flood authority nexus: Haul Road project emergency repairs to utilities → nature-based
- Giant wells
- Chehalis RM 13-20 Investment Plan
  - GHCD has opportunities
  - Derelict infrastructure removal
  - Community engagement
- Level of 2023-2025 funding need: unknown

#### Chehalis RM 13-14

- Possible rail removal
- Current stage: design/plan
- Level of 2023-2025 funding need: \$3-8mil

#### Surge Plain and Mouth of Tributaries Land Protection Project Development

- Scope: ID appraise and acquisition strategy for small parcels
  - Protection / conservation easement
  - Identify restoration opportunities on protected land (remove derelict infrastructure, reconnect tidal sloughs, vegetation management (option to assess/study veg. assemblage))

- Partners: land trust orgs and conservation landowners (e.g., DNR in surge plain and at Elk River, DFW, Chehalis Basin Land Trust, Audubon Society, Forterra), state agencies, Tribes
  - Other stakeholders: ag interests
- DU or other could take on title work
  - Overlay landowner parcel ownership on a map of the estuary to better understand opportunities
- Level of 2023-2025 funding need: \$80-150k
  - ~\$5k could be used to mobilize more \$ (federal)

### *2025-2027 ASRP Projects*

- [None specifically identified]

### *Potential Future Opportunities*

#### Creosote Piling Removal Plan PD

- Applicable to entire Estuary eventually
  - Some projects with piling removal activities could be near term actions
- DNR has a piling removal program (Christopher Robinson as point of contact)
- Partner: Green Crab Team (to help with mapping) connected to GHCD
- Mapped inventory already exists, but it is outdated (from 2012)

#### Aberdeen Shoreline Softening Project Development

- Focus on “bottleneck” area where all fish need to pass in or out of estuary
- Landowners: Port of Grays Harbor, Weyerhaeuser(?), Public roads (?)
- Scope: remove barriers for fish passage, public education opportunities, industrial cleanup, softening of shoreline
- Related opportunity: Historical Seaport Cleanup underway
  - NRDA process
- DNR as lead on shoreland improvement

### *Potential “low-hanging fruit” project opportunities*

- **Grays Harbor Mill site:** ~400 creosote pilings, starting major cleanup
- **IDD1 & Shannon Slough:** cleanup and protection opportunity
- **Support European green crab management (e.g., \$)**
  - GHCD priority areas: mouth of tributaries, esp. north bay
- **Cosmo fiber opportunities:** acquisition/protection, waste cleanup and barrier correction

## Goal 3 – Capacity

- Consultants may be used for shoreline design work
- Acquisitions: uncertainty with mechanisms and long-term stewardship
- Planning and parcel mapping
- Community engagement, starting with projects on public parcels
- People/orgs to add to subgroup/cluster:
  - USFWS Refuge Management staff
  - Chehalis Basin Land Trust
  - Audubon Society
  - Port of Grays Harbor
  - Coast Salmon Partnership
  - Cities of Aberdeen, Hoquiam, and Cosmopolis
- Stakeholders and other interest groups:
  - Sportfishing guides
  - Oyster growers
  - Dungeness fishers
  - Other fishery-related workers
  - Other natural resource industry (e.g., marine resources committees)
  - WSDOT

## Key Takeaways and Near-Term Action Items

### Key Takeaways

- New ecoregion! Mostly in project development phase, holds extra promise due to the number of potential partners also engaged or interested
- Mainstem Chehalis RM 13-20 investment plan as a template for project developments in the future (esp. Estuary area plans and Local Strategies)

### **Next steps: coalesce around a couple of project developments to bring forward (and bring along the federal funding conversation)**

1. Bring stakeholders together, educational opportunities (e.g., site visits)
2. With stakeholders, identify opportunities for restoration/protection
  - a. Mapping exercises, workshops
3. Group opportunities by Estuary area and/or project types
4. In each area, start advancing toward concept designs
  - a. Landowner interviews
  - b. Identify hotspots