Lower Columbia Estuary Partnership

Program Evaluation
July 1, 2019, through September 30, 2024

Prepared by E. Elaine Placido, DPA
Executive Director

Submitted to the 2025 PE Team:

HQ Lead Kathleen Kutschenreuter; R10 Lead Robin Parker; Ex Officio NEP Director Dave Tomasko

Contents

Introduction: The Lower Columbia Estuary Partnership Comprehensive Conservation and Management Plan

The Estuary Partnership Management Plan was developed from 1996 to 1999 using the extensive scientific research and analysis developed by the Estuary Partnership's predecessor, the Bi-State Water Quality Program, and other contemporary and historical data.[1] The management committee that developed the Management Plan was composed of 34 representatives of various river interests and used extensive and innovative constituent and public input to ensure that the Management Plan met local needs, represented local and regional values, and was supported by local communities and citizens. The Management Plan, adopted in 1999, identified 43 actions, complete with environmental goals and objectives, to address ***seven priority issues***:

- biological integrity
- habitat loss and modification
- impacts from human activity
- conventional pollutants
- toxic contaminants
- institutional constraints
- public awareness and stewardship

The Estuary Partnership's Management Plan was the first regional, two-state plan that articulated the estuary's importance and identified a set of actions to address ecosystem degradation. The plan considers individual species and conditions within the context of the whole ecosystem. It guides the region in knitting together disparate efforts so that together we make the most cost-effective investments in the lower river and estuary.

Management Plan Updates

The Estuary Partnership Board of Directors has updated specific actions, Chapter 5 of the 1999 Management Plan, three times. In 2001, the Estuary Partnership aligned its restoration goals with the 2000 Biological Opinion. In 2009, the organization set a new target for habitat restoration when the region reached the first goal of 16,000 acres. In 2011 a more substantive update of the actions was undertaken to recognize the experience gained in implementing the Management Plan over the preceding twelve years. In 2023, the Board of Directors initiated a subsequent update of the actions to incorporate the increased knowledge gained from nearly three decades of implementing the Management Plan, to recognize the work of partners, and to incorporate emerging science.

The overall goals and focus of the 1999 plan and subsequent updates have not changed, and the Estuary Partnership acknowledges that it is far from finished restoring adequate habitat for species survival or removing pollutants. The science and knowledge we have gained in the past three decades do not change the objectives or direction of the original plan.

CCMP Actions:

The Management Plan is a comprehensive regional plan that is implemented through the coordinated efforts of many partners. Some actions fall under the purview of existing entities, some require the involvement of many entities and for others, the implementation needs have not yet been addressed. The Estuary

[1] *The Management Plan is available at www.estuarypartnership.org, (formerly www.lcrep.org) along with a description of how it was developed.*

Partnership augments existing efforts, fills voids where needed, and supports and expands the work of other entities. In implementing actions, the Estuary Partnership plays various roles that fall along a spectrum from merely tracking implementation to being one of the implementers. The Estuary Partnership reports on the state of the lower Columbia River and estuary, using a consistent set of indicators; this involves collecting and tracking some data and securing additional data from other partners when possible.

Habitat Restoration

ACTION 1: Inventory habitat types and attributes in the lower Columbia River and estuary and prioritize those that need protection and conservation; identify habitats and environmentally sensitive lands that should not be altered.

ACTION 2: Protect, conserve, and enhance priority habitats, particularly wetlands, on the mainstem of the lower Columbia River and in the estuary.

ACTION 3: Monitor status and trends of ecosystem conditions.

ACTION 4: Establish and maintain Columbia River flows to meet ecological needs of the lower Columbia River and estuary.

ACTION 5: Avoid the introduction of non-native invasive species.

ACTION 6: Manage human-caused changes in the river morphology and sediment distribution within the Columbia River channel and estuary to protect native and desired species.

Land Use Practices

ACTION 7: Develop floodplain management and shoreland protection programs.

ACTION 8: Reduce and improve the water quality of stormwater runoff and other non-point source pollution.

ACTION 9: Ensure that development is ecologically sensitive and reduces carbon emissions.

Water Quality and Contaminant Reduction

ACTION 10: Expand and sustain regional monitoring of toxic and conventional pollutants.

ACTION 11: Reduce conventional pollutants.

ACTION 12: Cleanup, reduce or eliminate toxic contaminants, particularly contaminants of regional concern.

Education and Stewardship

ACTION 13: Provide information about the lower Columbia River and estuary that focuses on water quality, endangered species, habitat loss and restoration, biological variety, and the effects of recurring extreme weather events on the estuary, to a range of users.

ACTION 14: Create and implement education and volunteer opportunities for citizens of all ages to engage in activities that promote stewardship of the lower Columbia River and estuary.

ACTION 15: Identify and improve public access to the river.

Regional Coordination and Synchronicity

ACTION 16: Facilitate and assist federal, tribal, state and local governments' protection of the lower Columbia River and estuary.

ACTION 17: Create and maintain a regional entity (Lower Columbia Estuary Partnership) to advocate for the lower Columbia River and estuary and unify and coordinate Management Plan implementation.

CCMP Goals:

During the period currently under evaluation the Estuary Partnership was working to achieve the Goals of the 2011 CCMP Update, which are below:

- Increase habitat and habitat function for multiple species; restore 25,000 acres of habitat by 2025.
- Conserve land to protect water quality and habitat; reduce impacts from land use practices; reduce armored shoreline by 10% by 2025; maintain impervious surface at no more than 15%.
- Reduce or remove contaminants and clean up contaminated sites to improve water quality.
- Provide education and engagement activities and provide data and information for a range of audiences; reach 5,000 students each year and host at least ten volunteer events each year.
- Convene and coordinate partners to enhance regional strategies and partnerships and heighten protection of the lower Columbia River.

Key Accomplishments:

Healthy Ecosystems:

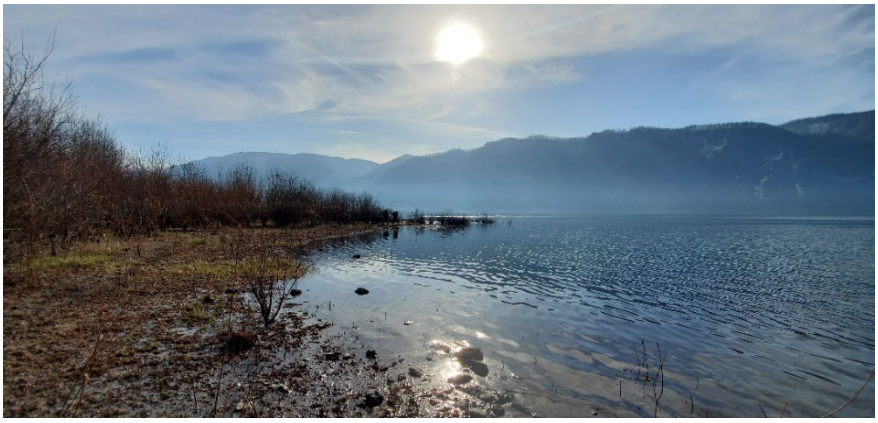
- Along with our partners, the Estuary Partnership restored, maintained, and protected more than 11,650 acres in the lower Columbia since 2019.
- The Estuary Partnership implemented and completed the largest habitat restoration project ever completed on the lower Columbia, at Steigerwald Lake National Wildlife Refuge. The project was a 965-acre, $32 million-dollar, multi-benefit, floodplain reconnection project that, based on early estimates, delivered an estimated $249 million in improvements from ecosystem service benefits including habitat improvements, increased recreational opportunities, carbon sequestration, improved air quality, job creation, and flood risk reduction.
- Funding for the next large habitat restoration project, a 3-river mile restoration and floodplain reconnection project on the East Fork Lewis River was secured. Permitting was completed in late 2024 and construction will begin in April 2025, following what has been more than a decade-long collaborative process with agencies, community members, and others to restore the wild steelhead gene bank river.
- The Estuary Partnership launched a Tableau Dashboard to disseminate results and data for Ecosystem and Action Effective Monitoring and Research happening in the lower Columbia.

Clean Waters:

- The Estuary Partnership, partnering with USGS; the Oregon Water Science Center (ORWSC); the Columbia Environmental Research Center (CERC); and the USGS National Water Quality Laboratory (NWQL), received funding from the US EPA's Columbia River Basin Restoration Program to sample for toxic contaminants at 9 sites on the lower river. The Columbia River Inter-Tribal Fish Commission contributed to a 10th site to ensure a full suite of sites comparable to previously monitored sites.
- The Columbia River Basin Restoration Program provided significant funding for a School Yard Stormwater Retrofit Project. The project has already met its goal to implement retrofit projects at a dozen schools and will continue to implement stormwater retrofit projects in concert with a wide array of partners. The projects not only provide water quality improvements, but they reduce heat islands, provide increased green space for students, and offer opportunities for engagement and science learning.

Strong Communities:

- With funding from NFWF and in partnership with Washington Sea Grant and the Pacific Conservation District, the Estuary Partnership hosted a series of community meetings that led to the creation of a Sea Level Rise Resilience Strategy for the rural SW Washington communities.
- The Environmental Education program at the Estuary Partnership provided hands on science education to 11,878 students. During service-learning projects, students planted 39,989 native trees and plants.



Response to Challenges Identified in the 2018 Program Evaluation:

The Estuary Partnership received two Challenges at the completion of the last PE in 2020. The Estuary Partnership team worked hard to address both challenges:

Challenge 1: Revise the CCMP

Action Taken: In mid-July 2020 I took over as the new Executive Director of the Lower Columbia Estuary Partnership, only the second Executive Director in the organization's then 25-year history. It was deep in the pandemic and the staff was dispersed, working from home and trying to shift to what would become the reality of pandemic work for another year or more. In 2021, we began a strategic planning process that was complete in 2022, the Board adopted the new Strategic Direction in 2022 along with a new mission:

> *To restore and care for the waters and ecosystems of the lower Columbia River, for current and future generations of fish, wildlife, and people.*

The work that the organization did in completing the Strategic Direction, including guided interviews with partners and focus groups, helped to better identify how we envisioned the work of updating the CCMP. The CCMP Update was officially launched with a retreat for Board and staff to identify the focus areas of the Update, in February 2023.
The objectives of the update were to;

1. Assess the current actions for their relevancy and consideration of recurring extreme weather events on the estuary, vulnerable communities, access, recreation, and community education.
2. Update measures and provide updated targets where appropriate.
3. Integrate updated habitat restoration targets and ensure the Update reflects our learning and progress from 30 years of work.
4. Update actions and integrate measures that are informed by the identification and assessment of vulnerabilities in the estuary including the Estuary Partnership's assessments of sea level rise, cold water refuges, and carbon and methane fluxes.

The key focus areas for the Update, based on the Strategic Direction and the outcomes of the February 2023 Retreat were;

1. Recurring excessive weather events, sea level rise, and accelerating land loss
2. Access and recreation
3. Vulnerable communities
4. Community education

While engagement with the public and partners was a priority for the Update, one of the most important steps in the Update process was a Walk and Talk hosted by Estuary Partnership partners CREST and the National Park Service, in September 2024. The event featured a tour of the Colewort Creek Restoration Project, a habitat restoration project that CREST and NPS completed that had recreation components, community education components, and was in an area of the estuary impacted heavily by sea level rise and changing weather patterns. Representatives from federal, state, local agencies, and nonprofit organizations participated in the tour, discussion, and workshop that followed to dig into the actions of the CCMP, including updating objectives and targets.

In December 2024 the first round of review began on the draft Update. The final draft was submitted to the

region on April 1, 2025.

The Strategic Direction, completed in 2022, set the direction for the CCMP Update. The Update kicked off in February 2023, the final and most substantial engagement opportunity was in September 2024, and the Update was in a draft/revision cycle from December 2024 until April 2025. Having the Update complete and approved prior to the PE would have been ideal, but completing the Strategic Direction was critical to better understanding the environment the organization was working in. As was taking the time to engage, learn, and understand the current relevancy of the actions, the objectives, and identifying new targets.

Challenge 2: Explore Creative Ways to receive feedback from stakeholders for ongoing program improvement.

Action Taken: Engagement with the public and partners is at the heart of everything we do. There are no projects that we undertake alone, partners and communities are always involved. Some of our communications methods are more traditional ways for the Estuary Partnership to share information with communities and partners beyond the Estuary Partnership including;

- The Estuary Partnership maintains a website with links to historic documents, research, story maps, data, current events, project updates, a Board specific webpage, and information about projects, activities, and how to contact staff.
- The Director's e-Update is a monthly email that provides project updates and news from the Estuary Partnership. Currently the email list goes to approximately 700 email addresses.
- The Columbia Connections Newsletter is a bi-monthly email newsletter that shares more in depth updates from the Estuary Partnership, it goes to 5,000 email addresses.
    - In 2023 the Estuary Partnership began using a CRM, Constituent Relationship Management system, to help better manage engagement and to gain insight from analytics. With the CRM we are able to track when emails are being opened, how many times they are forwarded, and to resend emails that weren't opened. Often when we resend to email addresses that didn't open the first email, we are able to update the information so that what they open is current. Having the analytics has helped us understand our impact with the eUpdate, Columbia Connections, and other electronic communications that we send.
- Updated the Annual Year in Review report to be an engaging and informative communications device that contains a map and focused updates on projects throughout the region.
- Project Specific Communications Plans offer the opportunity to consider and plan for engagement including work across teams, bringing environmental education and stewardship activities to habitat restoration projects.
- Project Listservs have been a new way to engage specific segments of the study area that may be more interested in the details of a specific project. The listservs provide regular updates, invite community members to live

opportunities to engage such as tours and presentations, and invite feedback. Currently there are project specific listserv lists for the East Fork Lewis River Project, Campen Creek Reconnection Project, and several stormwater projects.

- The Estuary Partnership maintains active social media accounts at Facebook, Instagram, and LinkedIn. Social media is a great way to share Estuary Partnership updates as well as amplify news from partners.
- Over the last few years, the use of tours has increased our ability to connect with community members and partners directly at project sites. Members of the public have the opportunity to walk alongside and learn from project experts and partners in a way that connects them to the projects and our work in new and deeper ways. To the left, Chris Hathaway, Community Programs Director, and Chris Collins, Restoration Program Lead, show a map of a project site at Campen Creek to partners from local governments in 2023. Tours provide us the opportunity to hear about concerns, further opportunities for engagement, and to bring partners and community members out into the field with us.

Figure 1 Tour at Campen Creek Restoration Site

- In 2021 the Estuary Partnership added a public affairs position to our organization, the Public & Legislative Affairs Manager works closely with all members of the Estuary Partnership to help manage communications with community members and partners. They work to develop communications plans, organize public outreach events and tours, provide listserv updates, provide updates to congressional delegations, and manage all aspects of our public affairs work.
- The staff at the Estuary Partnership are everywhere! We're active in many different groups and attending even more, we're meeting with community organizations like PTA groups and Homeowners Associations to talk about proposal and project development, and we're inviting community members and partners to engage with us in stewardship and volunteer activities, on the water in the big canoes, at special events like the Science to Policy Summit, and on tours. In SW Washington we engaged with 102 community members on flood resilience in their communities, resulting in funded projects and inclusion in WRDA (spotlighted on page 22). 420 community members, scientists, and partners engaged in a day long exploration of carbon markets in the summer of 2024. The full list of engagement begins on page 28 of this report.

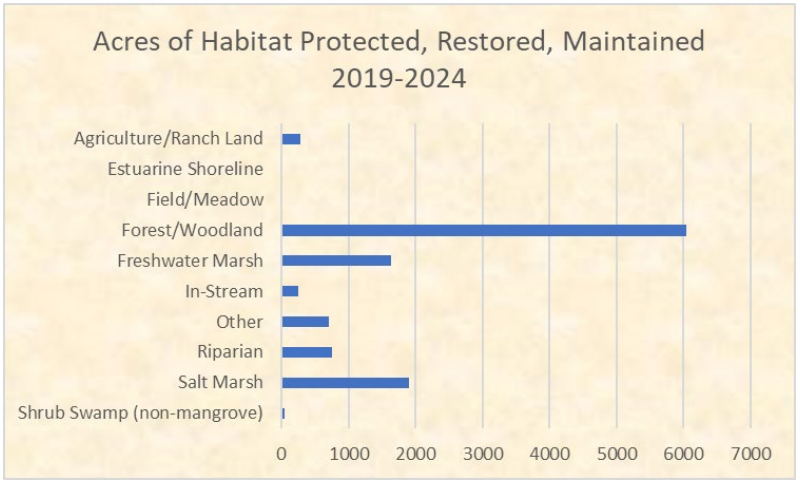
Environmental / Programmatic Workplan Accomplishments:

The following information will illustrate the environmental and programmatic progress the Estuary Partnership has made towards achieving the goals and objectives identified in its CCMP through selected workplan accomplishments.

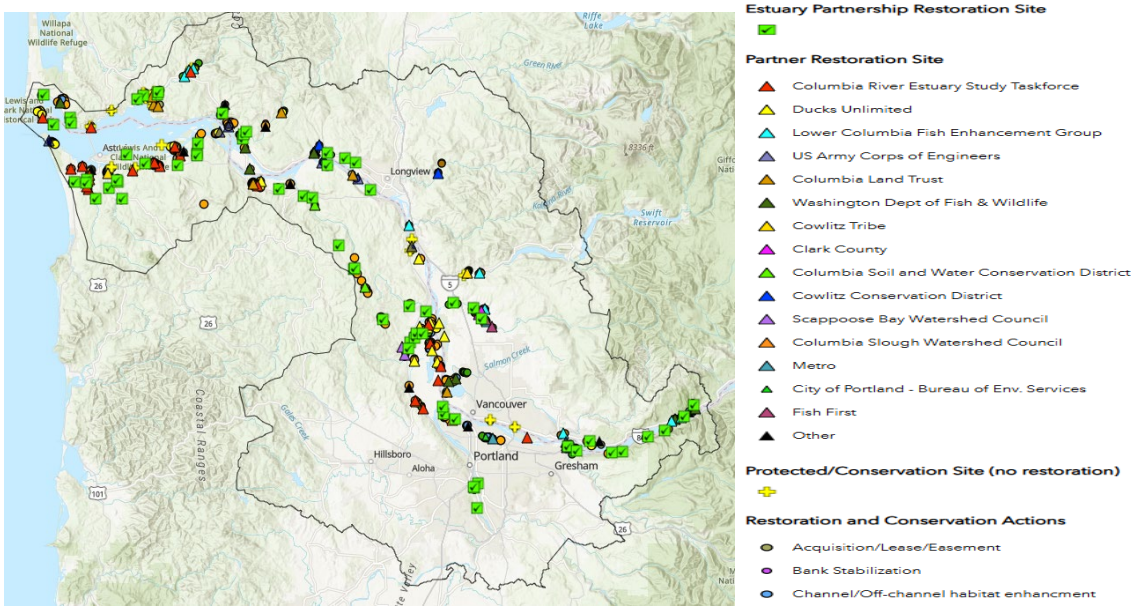
Healthy Ecosystems:

During the period from July 1, 2019, through September 30, 2024, the Estuary Partnership worked on multiple CCMP Goals and Actions aimed at achieving environmental and programmatic progress related to healthy ecosystems.

Since 2019, the Estuary Partnership and our partners have completed restoration, protection, and maintenance actions on 11,650.33 acres. In total, since 2000, the Estuary Partnership has implemented and completed 84 projects that have restored or protected over 5,149 acres and opened more than 83.7 miles of stream habitat. When combined with partner projects, the region has completed 284 projects representing 35,342 acres restored or protected.



The Estuary Partnership collects data, updates and maintains a regional habitat restoration inventory that is available to partners and the public at https://www.estuarypartnership.org/our-work/habitat-restoration/lower-columbia-regional-habitat-restoration-inventory. The inventory includes a searchable map with all completed projects in the study area.



2 Screen grab of searchable Habitat Inventory

Habitat Restoration: The Estuary Partnership had a CCMP goal to restore 25,000 acres of habitat by 2025. That goal was met and exceeded by more than 10,000 acres. In 2016, the Estuary Partnership Board approved resource-based habitat coverage targets previously developed through the Science Work Group:

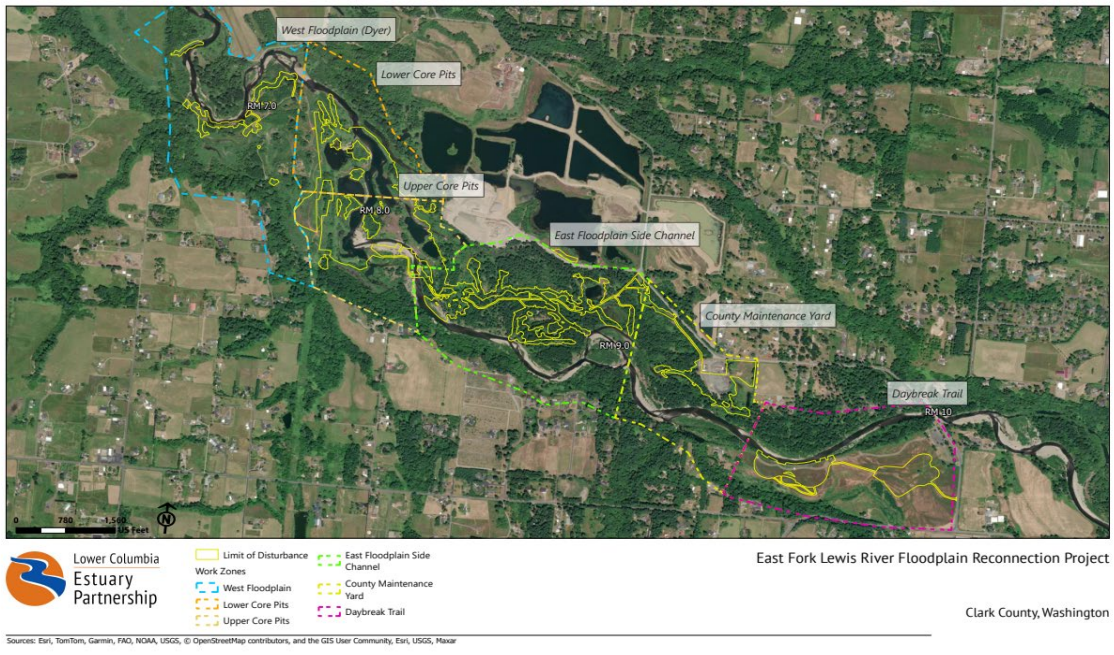
1) No net loss of native habitats from the 2009 baseline;
2) Recover 30% (10,382 acres) of the historic coverage of priority native habitats by 2030; and
3) Recover 40% (22,480 acres) of the historic coverage of priority native habitats by 2050.

These updated targets focus on maintaining the remaining native habitat and restoring priority habitats. In 2025 the data is being collected and analyzed for an updated landcover dataset which will provide the status of work towards those updated goals.

In 2022, the Estuary Partnership completed a project to identify cold water refuge locations within East Fork Lewis River (EFLR) using remote sensing by field verifying areas identified by thermal imaging software. In 2024, we began work on the alternatives analysis for multiple sites on the EFLR to improve thermal conditions for cold water refuges. This work was used to inform project design at the EFLR Reconnection Project that will begin construction in summer 2025. The EFLR project is a large, 3-river mile project that consists of multiple components including,

- Restoration at Dyer Creek
- Reclamation and restoration at the Ridgefield Pits on the EFLR
- Recreation and access improvements at Daybreak Park and along the EFLR Greenway and trail network
- Relocation of a Clark County Maintenance Yard to decrease flood hazard risks
- Restoration of the eastern floodplain

The EFLR Reconnection Project and associated habitat restoration activities will include channel modification, fill material, levee removal, off/side channel creation and enhancement, revegetation, and wood debris placement. The project is funded by the National Oceanic and Atmospheric Administration (NOAA), Washington Recreation and Conservation Office (RCO), and Washington Department of Ecology (ECY) through the Floodplains by Design Program.



3 Vicinity Map of the EFLR Reconnection Project

Another project, at Woodard Creek has been a partnership with the US Forest Service (USFS) and the Columbia River Gorge National Scenic Area. The Upper Woodard Creek Restoration Project restored a 1-mile stretch of this remote, salmon-bearing stream on the Washington side of the Columbia, and revegetated 15-acres along the stream banks. A second phase of Woodard Creek is funded for construction, while a third phase is completing feasibility studies.

In 2021 the Estuary Partnership received funding to complete a multi-year fish passage barrier assessment. The Assessment is nearing completion with the project ending in spring of 2025. The fish barrier assessment project will provide a unique ID to each fish barrier in the southwest region of Washington, along with location and ownership, site comments, photos, and potential fish use. The fish barrier project is funded by and a partnership with the Lower Columbia Fish Recovery Board (LCFRB) and the Washington Department of Fish and Wildlife (WDFW). The Estuary Partnership is seeking funding to complete 1-2 of high priority barriers in the next two years.

Horsetail Creek, in the Columbia River Gorge, is home to multiple projects including Phase 1 of reconstruction which was completed in 2017 and can be explored in this story map. Phase 2 began in 2017 and continued through 2024. In 2017, the site was impacted by the Eagle Creek Fire, which burned approximately 16 acres at the site. In 2020, the Estuary Partnership worked with the USFS to fell trees and add them to the Horsetail floodplain to increase habitat complexity. Between 2020 and 2024, contract crews planted 92,000 native bare-root plants and stakes. And in 2024, beaver dam analogs were installed in the restored floodplain.

4 Pounding in stakes for a beaver dam analog

In 2021, the EPA released the Columbia River Cold Water Refuges Plan which identified Horsetail/ Oneonta Creek as a potential site for enhanced cold water refuge. With funding from East Multnomah Soil and Water Conservation District (EMSWCD) the Estuary Partnership completed feasibility studies and 30% design for the thermal refuge enhancement.

During the evaluation period, 2019-2024, the Estuary Partnership hosted Project Review Committee meetings with field trips to evaluate restoration projects proposed for Bonneville Power Administration (BPA) funding. The Project Review Committee is a subset of the Estuary Partnership's Science Work Group. Projects selected for funding must align with the review criteria established by the Estuary Partnership and the Expert Regional Technical Group (ERTG).

Spotlight: Steigerwald Reconnection Project

In the summer of 2019 work began on the largest floodplain reconnection and restoration project ever completed on the lower Columbia River. By the time construction was completed in 2022, 965 acres of historic Columbia River floodplain was reconnected for the first time since the 1960s. The $32 million dollar project was supported by funding from:

- BPA
- The Bonneville Environmental Foundation
- Washington Department of Ecology
- Floodplains by Design (WA ECY)
- National Fish & Wildlife Foundation
- US Fish and Wildlife Service

Explore the Steigerwald Story Map

Steigerwald was a significant multi-benefit project that included removal of an elevated streambed and reconstruction of an alluvial fan that allowed Gibbons Creek to flow naturally into and through the floodplain at Steigerwald Lake National Wildlife Refuge (NWR). Flood risk related to Gibbons Creek was reduced with a floodwall along private property that tied into a newly constructed setback levee that provided flood protection to the Port of Camas-Washougal and saved the Port tens of thousands of dollars annually in pumping costs. Additionally, flood risk to WA State Route 14 was reduced with the elevation of 1400 feet of the state highway. Crews removed more than 2 miles of river front levee and opened four new direct connections to the floodplain, creating over 115 acres of new wetlands. The restoration site also boasted significant revegetation work including the planting of more than a half million trees and shrubs and 14,000 pounds of seed. Estuary Partnership staff harvested wapato, an important food for local indigenous peoples, and planted or transplanted over 2,000 tubers and seeding 30 pounds of hand-harvested wapato seed. The site, already very popular with birders, and located within minutes of the Portland-Vancouver metropolitan areas, added over a mile of trails, viewing platforms, a new parking lot and a trail connection to the larger Columbia riverfront trail. The Steigerwald Project page links to important project information, videos, and the storymap (also linked above). In addition to the habitat restoration components at Steigerwald, the project site is also the subject of monitoring and research including planned 3 and 5-year monitoring in 2025 and 2027. Monitoring was completed in 2023 following the closing of construction. The Action Effectiveness and Research Dashboard for Steigerwald is also linked from the project page and is linked here, as well.

Action Effectiveness Monitoring: the Action Effectiveness Monitoring Research (AEMR) program is implemented to determine the effectiveness of our restoration activities in improving salmon habitat and to inform future actions. AEMR data includes:

- Hydrology, temperature, habitat, and vegetation coverage at sites
- Tracking the residency time and types of local salmonid populations

Baseline data is collected prior to implementation of restoration activities, then data is collected after completion of restoration activities to help us better understand how restoration is impacting site ecology and whether actions meet design objectives. The Estuary Partnership collects comparable and a fuller suite of metrics at a suite of reference sites to us in comparing to restoration site data and track conditions in the estuary over time. An annual report is provided for the Science Work Group. The most recent report is available on the Tableau Dashboard and in the report here.

Highlights of the AEMR program over the evaluation period include:

- 2018-2024: Implemented annual programmatic restoration AEMR. Level 2 AEMR data was collected at 4-6 restoration sites annually along with paired reference sites, which results in 8-12 sites per year. Synoptic fish use data was collected at Level 2 AEMR sites at year 5 post restoration. In 2020, collection of synoptic fish use data at Level 2 AEMR sites at year 5 post restoration was canceled because of COVID. The Estuary Partnership also managed, analyzed and reported Level 3 AEMR data collection sites at all other restoration sites.
- 2019-2024: Held annual Science Work Group meetings to discuss results and discuss issues, comments with AEMR Program.

5East Fork Lewis River UAV photo

The AEMR program utilizes unmanned aerial vehicles – UAVs or drones – in the collection of data. The team uses near infrared (NIR) and RGB sensor data collected by the UAVs to generate multispectral composite orthomosaics and digital surface models of site elevations.

To the left is a photo of the East Fork Lewis River taken from a UAV during project development at the EFLR project. And below is a screen grab from a model of the South Fork Toutle River that will be used by partners to develop habitat restoration projects on the river impacted by the 1980 eruption of Mt. St. Helens.

6 Model of South Fork Toutle River

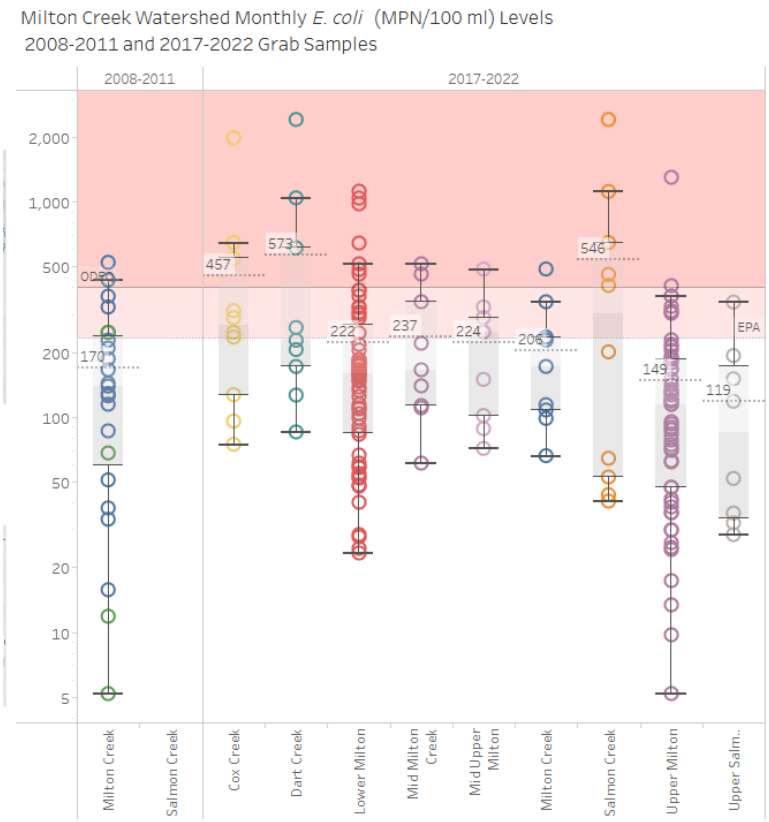
Clean Waters

During the period from July 1, 2019, through September 30, 2024, the Estuary Partnership worked on multiple CCMP Goals and Actions aimed at achieving environmental and programmatic progress related to clean waters.

Marine Debris: In 2019 the Estuary Partnership received $25,000 from the Oregon Department of State Lands (DSL) Submerged Lands Enhancement Fund grant for implementing a marine debris cleanup project of approximately 16 miles of shoreline along Multnomah Channel, Sauvie Island, and Portland Harbor. In September 2019, the Estuary Partnership completed the marine debris clean-up along Columbia River, Willamette River, and Multnomah Channel shorelines; Removing more than 200 tires, 6,840 lbs. of mixed garbage, 2,460 lbs. of metal, and one 20-yard drop box full of Styrofoam.

Water Quality and Toxics Monitoring: In 2024 the Estuary Partnership's Watershed Evaluation Program completed 3 sampling events at 10 sites. The goal of the program is to characterize water quality conditions throughout the lower Columbia River basin, in the mainstem and in smaller tributaries with the recognition that long term monitoring data can inform restoration projects and help in the assessment of whether rivers are meeting guidelines for safe fishing and swimming.

One important long-term collaboration in local watersheds has been with the Columbia County Soil and Water Conservation District (CSWCD) and Columbia County (Oregon). Between 2018-2023 the water quality monitoring project in Columbia County collected temperature, turbidity, conductivity and E. coli data at 13 sites within the Clatskanie River and Scappoose Bay watersheds with CSWCD and OWEB funding. In 2021, dissolved oxygen (DO) and pH sampling was introduced at 13 sites within the Clatskanie River and Scappoose Bay watersheds with CSWCD and OWEB funding. And in 2022, the project expanded to include McNulty Creek watershed and monitor 7 additional stations in Milton Creek. The Estuary Partnership released an online interactive dashboard that provides a detailed look at the data and trends since the inception of the program.



7 E. coli bar and whisker plot from Columbia Co. WQ dashboard

The bar and whisker plot, above, is an example of data available to policy makers and the public on the dashboard. This particular graphic illustrates E. coli at various sampling sites, while the accompanying narrative provides potential actions to be taken including increasing riparian buffers, excluding livestock from creeks (this is a high density agricultural area of the basin), and updating septic systems.

Toxics monitoring, like all monitoring on the lower Columbia, has been consistently underfunded, and truly lacks long term, sustainable support. In 2022 the Estuary Partnership, partnering with USGS; the Oregon Water Science Center (ORWSC); the Columbia Environmental Research Center (CERC); and the USGS National Water Quality Laboratory (NWQL), received funding from the US EPA's Columbia River Basin Restoration Program to sample for toxic contaminants at 9 sites on the lower river. The Columbia River Intertribal Fish Commission (CRITFC) joined the collaboration to support monitoring at a 10th site. The EPA CRBRP funding, $344,020, represented 75% of the total project costs across the two year project lifespan. Monitoring will be complete in mid-2025. There is no identified source to continue that funding effort past 2025.

The Estuary Partnership has included Oregon Health Sciences University (OHSU) in their BPA Monitoring workplan to maintain and collect data at 2 platforms - the Beaver Army Terminal and Camas. The platform at the Beaver Army Terminal had historically been supported, operated, and maintained by USGS, but the USGS operation ceased along with their funding. Presently, this site is maintained through collaboration between USGS, OHSU, and CRITFC. Through community based funding appropriations CRITFC received funding to add "Burke-o-Laters" to augment their Ocean Acidification and Hypoxia (OAH) sampling at several Coastal Margin Observation and Prediction (CMOP) locations.

Spotlight: Stormwater Program

The Stormwater Program at the Estuary Partnership is a growing program that focuses primarily on completing stormwater retrofit projects at area schools, community centers, and businesses. The program benefits from a rich set of partners and funders. A significant boost to the program was through a large grant from the EPA as part of the CRBRP, which provided $4,287,696 in funding for school yard stormwater retrofits. These school yard stormwater retrofit projects provide multiple benefits in addition to clean water, they provide additional green space for school yard activities – during the pandemic some local schools that had completed projects were able to enjoy class and mealtimes in their newly completed school yards; they help keep urbanized areas around the project sites cooler in the rising summertime temperatures; and they reduce stormwater runoff from recurring excessive storm events.

School Stormwater Retrofit Projects have been implemented across the study area during the evaluation time period:

2019:

- Completed Boise-Eliot/Humboldt schoolyard stormwater project in September 2018-March 2019, with funding from City of Portland Bureau of Environmental Services (BES), and an Oregon DEQ Supplemental Environmental Project
- Received funding from BES CWSP for stormwater work at Sitton School July 2019 – June 2020.

2020:

- Completed Vernon School schoolyard stormwater project in December 2019 in the Vernon School courtyard.

- With funding from the Tualatin Soil and Water Conservation District, completed a project to conduct stormwater retrofit site assessments at schools, churches, and community centers in Washington County (Oregon).
- Completed work on the Sitton Schoolyard Stormwater project in April 2020.

2021:

- VetsWork (NOAA funded intern) staff maintained previous projects at Sitton School and Vernon School and Boise Eliot/Humboldt school.
- Delivered stormwater focused environmental education to hundreds of students in Washington, mostly in Clark County.

2022:

- Continued work on a series of existing grants (TSWCD, LCFRB-CCCWRF, and Ecology 319) to develop stormwater retrofit projects at schools and community centers (TSWCD) and deliver stormwater focused education to students as part of riparian planting projects (LCFRB-CCCWRF and Ecology 319).
- Developed project at Mittleman Jewish Community Center.
- Developed potential new large stormwater project at Washougal High School.

2023:

- Awarded a grant for the EPA Columbia River Basin Toxics Reduction, Fund the Funder grant program focused on developing and building schoolyard and school parking lot stormwater retrofit projects. EPA will award the project $4,287,696. Created the beginnings of a large School Stormwater Retrofit Program through partnership development, building on existing school projects, developing new projects, and staging future projects. Project includes staff time for environmental education and student engagement as well as for on-the-ground projects.

2024:

- Completed the TSWCD TREE project to identify stormwater retrofit sites in Washington County. Identified three key sites and developed concept designs and cost estimates for each.
- Through a number of LCFRB-CCCWRF grants and WA Ecology grants, continued to deliver stormwater focused education to students in Washington (mostly in Clark County).
- Formally started work on a stormwater retrofit project at Washougal High School and surrounding streets with funding from EPA and a City of Washougal WA Ecology Stormwater Financial Assistance Program grant ($390,502). Contracted with Robertson Fick Engineering for engineering and design work.
- Continued work on the Mittleman Jewish Community Center (MJCC) Project. Completed 100% designs, secured project permit, solicited construction bids, and selected a contractor – Blossom Construction. Construction took place August – December 2024.
- Sunnyside School: Hired contractor, met with school and school district staff, hosted a legislative site tour, created 50% and then 100% construction drawing, and finalized the $26,996.52 from Clackamas County Water Environment Services RiverHealth grant for a stormwater retrofit project at Sunnyside School in the North Clackamas School District.
- Evergreen High School: Submitted and received notice of funding (through City of Vancouver) for a stormwater retrofit project at Evergreen High School funded by WA Ecology Stormwater Financial Assistance Program ($379,306). Funding will fund all project design work. A future grant application will be required for construction. Construction will start later in 2025.
- Glencoe: Worked with the Glencoe PTA and Portland Public Schools (PPS) to receive a City of Portland Percent for Green grant ($109,890) for a stormwater retrofit project at Glencoe School. Signed a contract with the City, hired Juncus Studio to complete design work, participated in a community event to gather community feedback. Work will continue in 2025 with possible construction in summer 2025.

- Creston Annex Head Start: Worked the KPFF, PPS, and Learning Landscapes on a project at Creston Annex Head Start developed primarily by KPFF. The Estuary Partnership served as the City of Portland Percent for Green grant applicant. The City of Portland will fund $275,103 for the project.
- Developed plans for an RFP from our on-call list to develop stormwater retrofit designs at Chief Joseph Elementary school based off of concept plans developed by the PTA.
- Fort Vancouver and Hudson's Bay High School. Developed and submitted Ecology Stormwater Financial Assistance Program grant applications for design work at both high schools.
- Laurelhurst: Provided $5,785 to Laurelhurst School for a stormwater project that helped alleviate school flooding issues and that routed additional stormwater to an existing facility increasing its impact.
- Rigler School: Worked with the Rigler Padres Unidos de Rigler to help them secure $23,500 from the EMSWCD for the Rigler project. Submitted a final application to City of Portland Percent for Green program to fund stormwater work at Rigler and received word the project would receive $348,023 in funding. We received an additional $60,000 from the Rose Foundation for the project. Hosted EPA Regional Administrator Casey Sixkiller, other EPA staff, and staff from other partners and stakeholders at a project kick-off event in January 2024.
- Continued to meet with facilities staff at Evergreen Public Schools, Vancouver Public Schools, Portland Public Schools, North Clackamas School District, Washougal School District, Depave, and others to lay the groundwork for future school stormwater projects.
- Completed Year 5 of a 6-year Clackamas County WES "Watershed Health Education Support" project.

Additional Stormwater Programming:

The Baker Bay Stormwater Retrofit Project in Ilwaco, WA. It is a partnership between the City of Ilwaco, the Port of Ilwaco, and the Estuary Partnership to enhance the water quality of Baker Bay. The project adds stormwater treatment facilities along the main street in the Port area of Ilwaco and adjacent parking lots. Pedestrian connections and improved streetscapes are also benefits of this project. The $2.18 million dollar project is funded entirely by the Washington Department of Ecology and the Estuary Partnership.

8 Conceptual rendering of the Ilwaco Stormwater project

The Grattix Box project funded by the EPA through the CRBRP was completed in 2023. The complex project delivered a total of 26 Grattix boxes - essentially self-contained stormwater treatment facilities designed to treat stormwater runoff from large metal roof structures. In total these boxes came from: 10 refurbished boxes built and donated by Oregon State University, 11 built through volunteer work parties, and 5 donated boxes from the Port of Vancouver. The Estuary Partnership delivered and installed 15 fully built boxes and 11 partially built boxes to be built out by recipients.

Grattix Boxes are in place at the City of Vancouver Water Resources Education Center, City of Woodland Horseshoe Park Buildings, Columbia SWCD, Next Adventure Scappoose Bay, Northwest Packing Company, Rruff House, University of Portland, and Vigor Industrial LLC.

In 2023 the Estuary Partnership and the City of Rainier, finalized construction of the Rainier Boat Ramp stormwater retrofit development project in coordination with City of Rainier, Juncus Studio, and Verde Builds using funding from an Oregon Department of Environmental Quality (DEQ) Supplemental Environmental Project (SEP) and EPA IIJA funds. The project constructed two stormwater facilities comprising 640 square feet to treat 13,149 square feet of impervious parking lot at the boat ramp.

In 2021 completed a project funded by Clackamas County Water Environment Services RiverHealth grant program planted hundreds of plants along a small stream to better absorb stormwater from the Dave's Killer Bread. The same funding source also funded a stormwater retrofit project at ClackaCraft, a local drift boat manufacturer. That project was completed in 2020.

Strong Communities

During the period from July 1, 2019, through September 30, 2024, the Estuary Partnership worked on multiple CCMP Goals and Actions aimed at achieving environmental and programmatic progress related to strong communities.

Technical Assistance: The Estuary Partnership provides technical assistance on a wide range of topics to local governments, agencies, and communities. The Estuary Partnership also hosts a number of databases and interactive maps on its website, available for use by anyone. While a comprehensive listing of all the outreach and participation that we conducted over the period is included in the following pages, a sample of some of the ongoing technical assistance the Estuary Partnership provided is listed below:

2019-2024: Provided technical assistance to the Columbia Soil and Water Conservation District for water quality monitoring at 13 sites in the Clatskanie River and Scappoose Bay watersheds, including writing proposals and securing multiple years of funding from Oregon Watershed Enhancement Board (OWEB) for ambient water quality monitoring in the Clatskanie watershed.

2019-2024: Tracked and provided information online and maps by request of all restoration and protection projects in lower river; the Restoration Inventory geodatabase includes all identified projects and their status (planned, underway or completed). Continued hosting GIS data, such as Restoration Inventory and Columbia River Estuary Ecosystem Classification online.

2019-2024: Provided AEMR and EMP water surface elevation, water temperature, sediment accretion, and vegetation community data collected under the EMP and AEM into Tableau to showcase data analysis results in easily viewable and shareable format.

2020 State of the Estuary Report: Every 5 years the Estuary Partnership releases a comprehensive report, The State of the Estuary Report, on the river, its changes, and how we're responding to them. The 2020 State of the Estuary Report is accessed online and features news, analysis and images in five sections: land use, connecting people to the river, endangered species, water quality, and habitat. The graph on the left is from the section on Water Quality and shows mainstem water temperatures over time. The next State of the Estuary Report will be released in late 2025.

Monthly Mean 7DADM (7 Day Average of the Daily Maximums) Temperatures °C

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	5.2	3.2	3.7	9.4	13.7	17.1	20.2	21.8	20.4	14.4	9.9	6.9
2018	5.6	5.1	5.3	8.8	13.3	16.4	20.2	21.6	18.9	15.3	10.6	6.8
2017	1.7	2.4	5.5	8.8	12.5	15.7	20.2	21.9	20.1	18.3	9.5	6.5
2016	4.8				14.3	17.4	19.9	21.4	19.3	15.0	12.0	6.1
2015	4.8	5.3	7.1	10.1	14.4	19.1	22.1	21.4	19.0	16.6	11.2	6.5
2014	4.9	3.8				18.0	19.8	21.7	19.6	17.0	10.1	6.8
2013	4.0	4.6	6.2	9.4	13.0	16.3	19.7	21.5	20.3	14.2	10.1	5.2
2012	5.0	4.9	6.0	8.7	12.1	14.6	18.0	20.6	18.9	15.1	11.0	7.5
2011	5.0	4.6	5.4	8.2	11.2	14.1	17.4	19.9				
2010	5.6	6.3	7.7	9.6	12.4	14.5	18.6	20.8	18.7	15.8	10.6	6.6
2009							20.0	21.5	19.7	14.8	10.2	5.4
Long-term Mean	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Overall	4.7	4.5	5.9	9.1	13.0	16.3	19.6	21.3	19.5	15.7	10.5	6.4
2014-2009	4.9	4.8	6.3	9.0	12.2	15.5	18.9	21.0	19.4	15.4	10.4	6.3
2019-2015	4.4	4.0	5.4	9.3	13.6	17.2	20.5	21.6	19.5	15.9	10.7	6.5

Important Thresholds

- 20°C (68°C) 7DADM, EPA Threshold for Salmon/Trout Migration
- 18°C (64°F) 7DADM, EPA Threshold for Salmon/Trout Migration plus Non-Core Juvenile Rearing
- 16°C (61°F) 7DADM, EPA Threshold for Salmon/Trout Salmon/Trout "Core" Juvenile Rearing
- 14°C (57°F) 7DADM, EPA Threshold for Steelhead Smoltification
- 13°C (55°F) 7DADM, EPA Threshold for Salmon/Trout Spawning, Egg Incubation, and Fry Emergence

9 Water temperature from the State of the Estuary Report

e-Update and Columbia Connections Newsletters: Over the evaluation period the Estuary Partnership has continued to provide information, data, science, and updates on Estuary Partnership activities through bi-monthly newsletters and monthly e-updates. The e-Update list reaches approximately 700 people per month, via email. The Columbia Connections Newsletter reaches approximately 5,000 people per month, also via

email. Both platforms provide links for readers to learn more and are good tools to invite participation and increase awareness of Estuary Partnership and NEP work.

Project specific listserv emails and media releases: In addition to the e-Updates and Columbia Connections Newsletters, the communications team at the Estuary Partnership also prepares and releases press releases and uses direct press outreach and frequent social media posts to keep communities and partners informed. Since early 2024 our use of proactive press releases – announcing upcoming work in communities via their local news and media outlets – has resulted in 12 stories. We use social media to promote the work that the Estuary Partnership is doing but also to amplify the work of our partners.

Project specific listserv emails provide interested community members regular updates on projects in their area including opportunities to meet with project staff and learn more about work happening at specific sites. The project specific listserv emails offer deeper and more detailed information on specific sites than the regular e-Update and Columbia Connections Newsletter. One of the project specific listserv subscription opportunities is for the East Fork Lewis River Reconnection Project. Subscribers see regular updates like the one below:

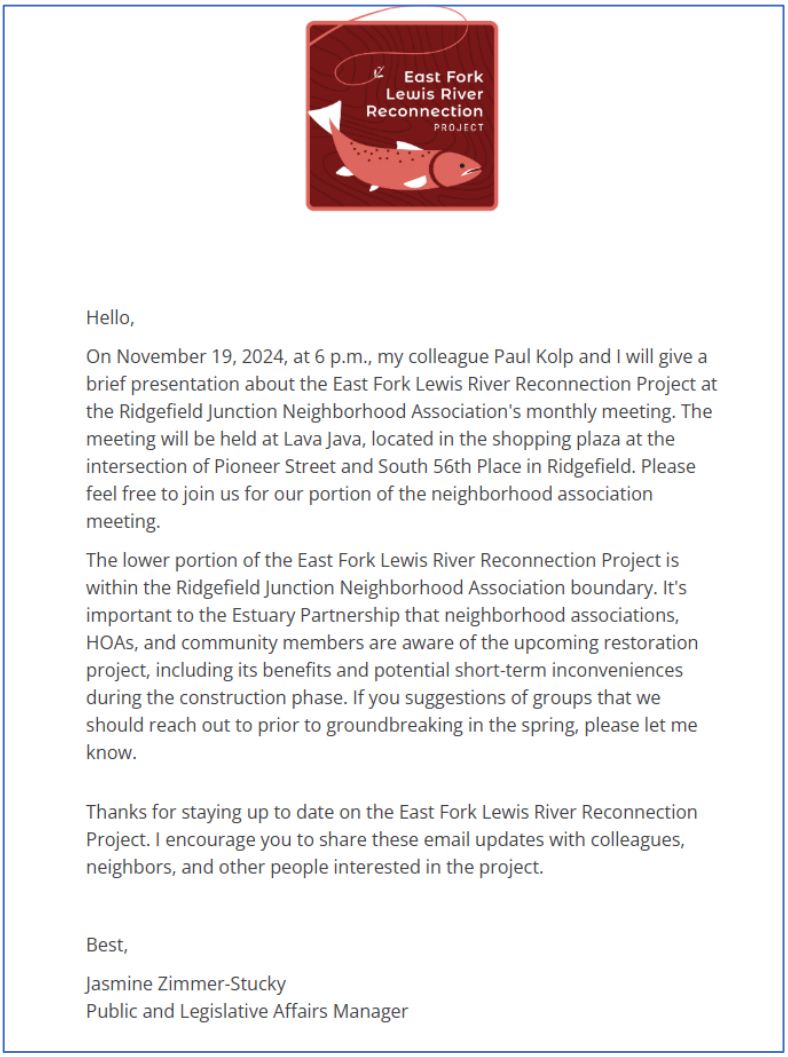


Figure 10 listserv email EFLR

Storymaps: Storymaps have evolved as a solid method of communicating a lot of information in a concise and compelling package, while more solidly connecting a story to a place in the estuary. Storymaps for different projects have already been highlighted, but each of the four storymaps completed during this evaluation period are also listed below:

Science to Policy 2019 – Reducing Plastics
State of the Estuary Report – 2020 (a series of 5 storymaps)
Horsetail Creek
Steigerwald Reconnection Project

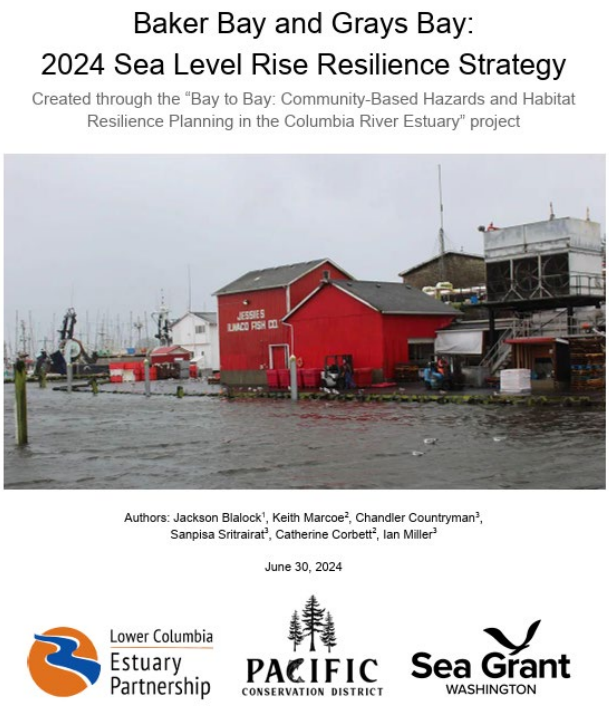
Columbia River Estuary Conference: Normally the Estuary Partnership hosts a Columbia River Estuary Conference (CREC) every other year. Unfortunately, during the pandemic, a multiple day gathering just wasn't possible. 2020 should have been a CREC year, but it was cancelled. We were able to host CREC in 2023. CREC 2023 spanned May 16th through May 18th and featured a wide variety of science focused sessions from regional experts and a poster session. All of the materials from CREC 2023 are publicly available. In 2025 the CREC Conference will be a single day event in May to accommodate the travel restrictions of our federal partners (and hopefully a second day in October if they are lifted).

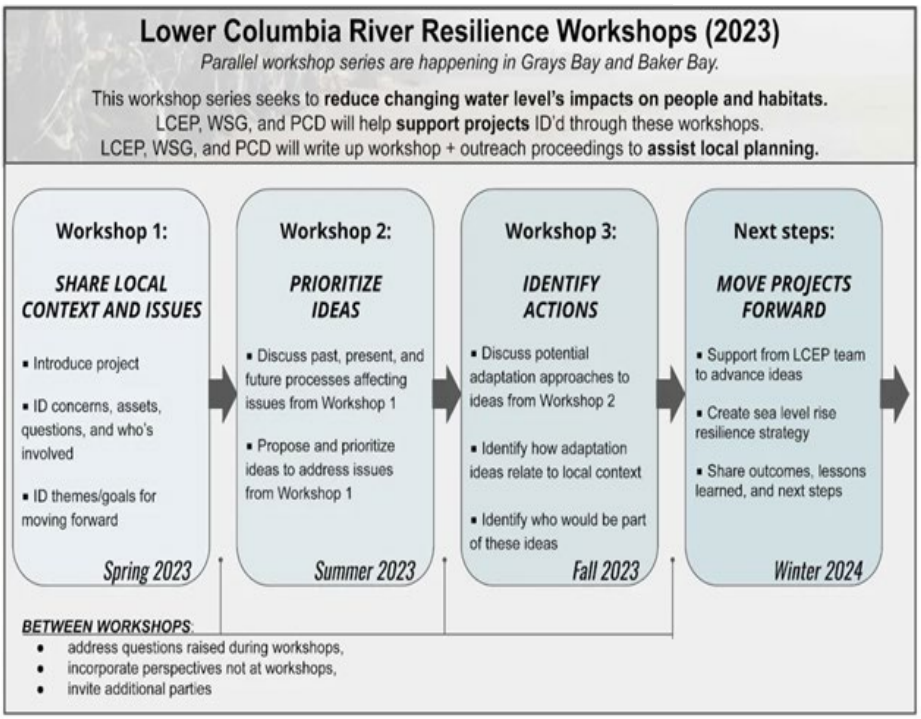
Science to Policy Summits: In the years opposite of the CREC, the Estuary Partnership hosts a Science to Policy Summit. The Summits are single day events that draw a wide range of scientists, natural resource professionals, and community leaders from throughout the region. The Summits have a single topic of focus; feature a panel of leading experts; invite the entire group to define the needs of the region; and identify a course of action that will support the regional objectives. Since 2007, many different topics have been explored in these unique and productive settings. Unfortunately, much like CREC, the Summits were really impacted by the pandemic. The 2021 event was cancelled due to Covid and the 2023 Summit was moved to 2024. The 2024 Summit was held in May 2024 at Lacamas Lodge and considered the opportunities that carbon programs may provide habitat restoration.

Spotlight: Baker Bay and Grays Bay 2024 Sea Level Rise Resilience Strategy

The Baker Bay and Grays Bay: Community-Based Coastal Resilience Action was a three-year initiative (2021-2024) aimed at supporting local efforts to mitigate the impacts of changing water levels on the people and habitats of Baker Bay and Grays Bay, Washington. This initiative addressed current flooding and potential future sea level rise, aligning with local priorities and scientific information to create a more resilient ecosystem for both people and habitats.

The Resilience Strategy was developed through a multi-phase process, including a four-part workshop held in the communities of Baker Bay and Grays Bay. It outlines several community-supported projects designed to reduce the impacts of flooding and sea level rise on both people and habitats.





This effort was led by the Estuary Partnership, Washington Sea Grant, and the Pacific Conservation District. It was primarily funded by a grant from the National Fish and Wildlife Foundation's 2021 National Coastal Resilience Fund, with additional support from the National Oceanic and Atmospheric Administration, the Estuary Partnership, and the Washington State Legislature through the Coastal Hazards Organizational Resilience Team program.

In addition to the completion of the Resilience Strategy, the communities were able to successfully secure funding for several projects identified in the planning process, and flood risk management, ecosystem restoration, and sediment management for the Grays River and Grays Bay were included in the 2024 Water Resources Development Act (WRDA).

Environmental Education:

There are few better ways to integrate projects into communities and to build long-term relationships with community members than to invest in high-quality, place-based, science education. The Estuary Partnership has had a successful Environmental Education program for many years, and in 2025 will celebrate working with 100,000 students in the lower Columbia region – this is a big impact, and a generation of school children have grown up learning about the importance of clean water, the impact of invasive species, and what the world around them looks like from one of our 29 foot canoes.

Science Education at the Estuary Partnership aligns with Next Generation Science Standards. The lessons are hands on, appeal to different learning styles, and engage students with active participation. The list of classroom lessons offered is updated regularly, but generally includes lessons on streams and watersheds, wildlife, birds, and fish and macroinvertebrates. The listing and description of classroom lessons is available here.

Since 2000, the Estuary Partnership has worked with 3,713 classrooms and reached a total of 98,595 students, providing 490,091 instructional hours. While the pandemic made major impacts on the ability of the Estuary Partnership's Educators to work directly with students, they shifted to providing take home science kits and many online opportunities for students, families, and educators. In each of the evaluation years the program made big strides in meeting its goal to promote stewardship in the lower Columbia and estuary, including;

2019-2020 School Year:

- Delivered 291 classroom visits for 2,590 students.
- 406 parent or adult chaperones participated in service-learning projects including invasive plant removal and installation of native trees and shrubs and provided watershed improvements.
- 150 students and 31 parent or adult chaperones took part in a canoe trip during their field experience.
- Students planted 14,609 native trees and shrubs and removed 4 truckloads of invasive plants.
- Service-learning projects were implemented at Vernon Elementary School, three locations along Burnt Bridge Creek, three locations along Woodin (Weaver) Creek, Fox Creek, Forest Park, La Center Bottoms, Sam Barlow High School, Salmon Creek, Steigerwald NWR and Vancouver Lake.

2020-2021 School Year:

- Worked in person with 858 students providing a total of 1,010 instructional hours through our education programs.
- Online virtual lessons were sent to 178 teachers reaching approximately 3,916 students (~22 per class).
- Implemented student service projects at 2 sites and provided watershed improvements by installing 259 native trees and shrubs and removing 2 truckloads of invasive plants.
- Developed new education approach for online and hybrid learning.
- Developed 20 online ecology lessons in response to the coronavirus pandemic

2021-2022 School Year:

- Worked in person with 2,639 students providing a total of 16,635 instructional hours through our education programs.
- Continued to provide check out kits, and to make on-line lessons available to teachers throughout the study area.
- Implemented student service projects at 8 different sites.
- Students and chaperones planted 8,759 native trees and shrubs, "daylighted" or pulled back encroaching weeds from existing trees and shrubs and removed 17 truckloads of invasive plants as part of service-learning projects.
- Developed a series of new classroom lessons- Watershed Floor Map and Detritivores- that address emerging issues and that could be taught in multiple ways (indoors, outdoors) and with students spaced apart.
    - The Watershed Floor Map, lesson plans, story cards and a fun video – created in partnership with the

Portland State University Center for Geography Education in Oregon - can all be accessed and explored through the QR codes below.

Lesson Plan Access:	Slide Deck Access:
Story Card Access:	Video Access (it is also embedded in the Slide Deck):

2022-2023 School Year:

- Worked in person with 2,965 students providing a total of 21,381 instructional hours through our education programs.
- Continued to provide check out kits, and to make online lessons available to teachers throughout the study area.
- Implemented student service projects at 13 different sites.
- Students and chaperones planted 10,135 native trees and shrubs, “daylighted” or pulled back encroaching weeds from existing trees and shrubs and removed 15 truckloads of invasive plants as part of service-learning projects.
- Created a series of outdoor lessons to implement on school campuses to expand student outdoor time.
- Enhanced some lessons to include Social-Emotional and Environmental & Sustainability state standards for Washington schools.
- Expanded standard programming through an immersive pilot program for 19 classes/477 students that provided three field trips to nearby natural areas and five lessons on their school campuses.

2023-2024 School Year:

- Provided 347 classroom lessons to approximately 117 teachers and 2,826 students.
- Provided 80 field trips including service learning and on-river field trips.
- Field trips engaged 2,950 students, 117 teachers, and 599 chaperones. Field trips took place at 19 sites, and included native tree and shrub plantings, projects to remove invasive plant species, nature hikes, on-river trips in the Estuary Partnership’s Big Canoes, and opportunities to connect with local ecology while applying science concepts in a real-world setting.
- Students and chaperones planted 6,486 native trees and shrubs, mulched new plants, monitored plant survival, “daylighted” or pulled back encroaching weeds from existing trees and shrubs, and removed 9.5 truckloads of

invasive plants as part of service-learning projects.

- 1,208 students, 220 adult chaperones, and 46 classroom teachers are engaged through on-river educational canoe field trips.
- Service-learning projects were implemented at Salmon Creek, Burnt Bridge Creek, Steigerwald Lake National Wildlife Refuge, Ridgefield National Wildlife Refuge, Forest Park, Meadowbrook North, Fox Creek, Forest Park, Meldrum Bar Park, the Sandy River Delta, and Veteran's Park.
- Additional field trip sites included Seaquest State Park/Silver Lake, Willamette Park, Cathedral Park, Scappoose Bay, Lacamas Park, Lewisville Park, Wapato Access Park, and Tenny Creek Park.
- Developed a series of new outdoor lessons to increase student outdoor learning time, explorations of their school campus, and increase student comfort outdoors. These classes were developed and implemented at four schools for 407 students.
- Secured funding to continue the school year long immersive learning for two additional years for 17 classes and 407 students. These students received three field trips to nearby natural areas and six lessons on their school campuses across multiple seasons.
- Supported two special educational events with the Children's Clean Water Festival (75 students) with partners at the Tillamook Bays National Estuary Program; and Earth Day Event at WL Henry Elementary (165 students).

Figure 11 Students engaged in water quality testing at Lake Sacagawea

Building Teacher Capacity: By providing outdoor teacher training and providing a free resources for teachers to use to check out kits with materials and lessons plans, the Estuary Partnership was able to build teacher capacity for science education. During the evaluation period the Education Team maintained a lending library of 20 different teacher check out kits that included all the necessary materials, supplies, and lesson plans to integrate outdoor environmental science activities into the school day. The kits feature materials otherwise not attainable because of their cost or time to create. Over the evaluation period the kits were utilized;

2019: 48 times by 25 schools and organizations
2020: 28 times by 12 schools and organizations
2021: by 3 schools and organizations
2022: by 7 schools and organizations
2023: by 13 schools and organizations
2024: by 6 schools and organizations, serving 13 classrooms

In 2024 the kits were duplicated and added to public libraries in Cowlitz County, Washington, and Columbia County, Oregon for teachers and other group leaders to access routinely.

The Estuary Partnership maintains a webpage with a searchable index of science kits for loan and downloadable resources for educators. These kits are used by classroom teachers, scout troop leaders, and other educators and small groups.

In 2019, 168 teachers took part in a field trip and gained hands-on experience leading outdoor science activities. And the Estuary Partnership hosted a teacher workshop in Oregon titled Outdoor Science Education on Schoolgrounds. 10 teachers participated and were presented with outdoor science activities aligned to

Next Generation Science Standards and Common Core State Standards.

Volunteer Program: The volunteer program integrates students and community members into habitat restoration projects and works to further the connection of community members to projects happening in their area. The volunteer program is generally aimed at planting native trees and shrubs at habitat restoration and riparian restoration sites throughout the study area, but volunteers also work to remove invasive plants, clean and maintain trails, and in the fall of 2024, they also assisted with our annual dinner. Private businesses use volunteer stewardship activities, managed by the Estuary Partnership's volunteer program, to engage their employees in community service opportunities: in recent years that includes crews from Amazon, UPS, Central City Concern's Community Volunteer corps, Gorge Refuge Stewards, Clark College and Washington State University.

Since 2000, 15,651 volunteers have engaged in a variety of activities, including water quality monitoring, tree planting, habitat mapping and water trail maintenance. Volunteers have planted 119,556 native trees and shrubs; combined with our students, volunteers have planted 232,746 native trees and shrubs. During the evaluation period the volunteer program has engaged thousands of individuals in the lower Columbia, including;

Figure 12 Chief Scientist, C. Corbett, (right) and volunteers working at Gibbons Creek

- *2019:* Engaged 385 volunteers, who donated 1,540 hours of time. Volunteers planted 7,500 trees and shrubs, removed 7.5 truckloads of invasive plants and mulched and installed tree tubes on 500 trees at sites in Oregon and Washington
- *2020:* Engaged 597 community volunteers, who donated 2,388 hours of time. Volunteers planted 9,807 trees and shrubs and mulched and installed tubes on plants in sensitive areas at sites in Oregon and Washington. Worked with 28 participants in Central City Concern's Community Volunteer Corps.
- *2021:* Engaged 424 community volunteers who donated 1,784 hours of time. Volunteers planted 12,472 native trees and shrubs, mulched 500 plants, and removed 4 truckloads of invasive ivy at project sites in Oregon and Washington. Worked with Amazon Managers, Gorge Refuge Stewards and many Clark College and WSU students.
- *2022:* Organized volunteer habitat enhancement projects at 7 sites. Engaged 695 community members in the planting projects (459 adults and 236 youth). Combined, the volunteers provided approximately 2,780 hours of volunteer labor to plant 16,175 native trees and shrubs, mulch around plants, and otherwise contribute to watershed health in Oregon and Washington.
- *2023:* Organized volunteer habitat enhancement projects at 8 sites. Engaged 616 community members in the planting projects (482 adults and 134 youth). Combined, the volunteers provided

approximately 2,464 hours of volunteer labor to plant 15,806 native trees and shrubs, mulch around plants, and otherwise contribute to watershed health in Oregon and Washington.

- *2024:* Organized volunteer habitat enhancement projects at 6 sites. Engaged 574 community members in the planting projects (395 adults and 179 youth). Combined, the volunteers provided approximately 2,464 hours of volunteer labor to plant 12,603 native trees and shrubs, mulch around plants, and otherwise contribute to watershed health in Oregon and Washington.

The Volunteer Program webpage hosts current information about volunteer activities and how to sign up.

Spotlight: On Water Programs

There is almost no better way to encourage a relationship with and a commitment to the river than to spend time on it. The Estuary Partnership has two 29-foot canoes that hold up to 24 people per trip, at 12 passengers each, and during the summer months hosts free community paddles on the mainstem Columbia, the Willamette, Vancouver Lake, and occasionally other waterbodies in the study area. Partners at the Oregon State Marine Board and the Tualatin Soil and Water Conservation District supported the creation of this video Introduction to the Summer Paddling Program.

Figure 13 Big Canoe silhouette

Since 2000, 31,659 youth and adults have paddled on the big canoes. Including,

- 2019: Led 27 paddle trips that engaged 526 participants
- 2020: Led 23 community paddle trips that engaged 472 participants
- 2021: Led 26 community paddle trips that engaged 349 participants
- 2022: Led 36 community paddle trips that engaged 571 participants
- 2023: Led 44 community paddle trips that engaged 698 participants
- 2024: Led 57 Community paddle trips that engaged 1144participants

In addition to the Summer Canoe program, the Estuary Partnership also hosts the Lower Columbia Water Trail with a searchable map, safety guides, and trip recommendations for trips on the lower Columbia Water Trail that spans 146 miles of the river from Bonneville Dam to the ocean.

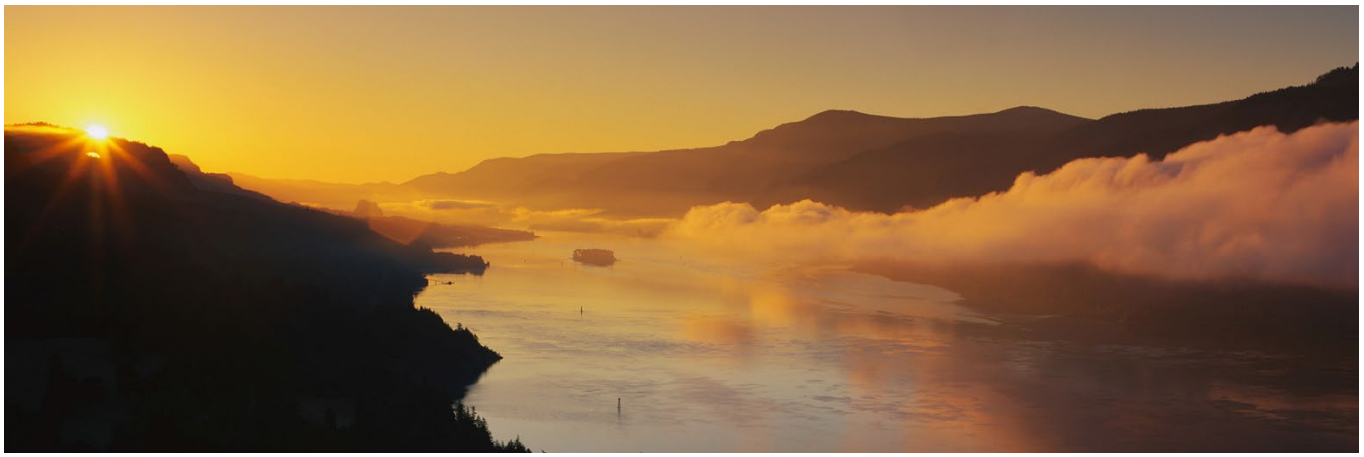


Figure 14 Columbia River Gorge at Sunrise

Engagement, Partnerships, Collaboration: The staff of the Estuary Partnership host, facilitate, present, participate, and attend in a wide variety of meetings and groups throughout the year. Below is a listing of all the places where Estuary Partnership staff collaborated, listened, led, and shared information over the evaluation period:

2019-2023: Participated as a member of EPA Columbia Basin Toxics Reduction Work Group to implement CRBRA.

2019-2024: Hosted regular Science Work Group meetings annually, including a paddle trip, and 1-3 annual Project Review Committee meetings with separate site visits. These were held virtually in 2020-2024.

2019-2024: Produced annual report.

2019: Completed training for all staff and Board who could attend and formed Steering Team, who received training, to guide organization through Strategic planning process,

2019: Completed Estuary Partnership States Cooperative Agreement outlined EP history and responsibilities of each to the NEP.

2019: Completed Estuary Partnership States Cooperative Agreement outlined EP history and responsibilities of each to the NEP.

2019: Expanded a partnership with Wild Diversity to help the BIPOC and LGBTQ build capacity to lead on-water paddling trips (supporting community identified need)

2019: Produced Science to Policy: Reducing Plastics summit report out in an interactive Story Map format.

2019-2021: Secured OWEB funding to make publicly available the story of the Horsetail Creek restoration project using our monitoring data. Completed Storymap and video for website telling the story of the project.

2019-2022: Participated as a member of EPA Columbia Basin Toxics Reduction Work Group to implement CRBRA.

2019-2023: Initiated discussion of methods for integrating predicted recurring excessive weather event impacts (or climate smart conservation) into lower Columbia River reserve planning at Columbia River Estuary Conference, River Restoration Northwest, Upper Columbia Salmon Recovery Board and Restore America's Estuaries, Puget Sound Action Team conferences

2019-2023: Participated in Oregon Ocean Acidification and Hypoxia Network, Washington Coastal Hazards Resiliency Network, NPCC Ocean Forum, and Northwest Association of Networked Ocean Observation Systems (NANOOS)

2019-2023: Participated as a member in the Washington Coastal Hazards Resilience Network

2019-2023: Participated as a member of EPA Columbia Basin Toxics Reduction Work Group to implement CRBRA.

2019-2023: Participated as member of NOAA Columbia Basin Restoration Task Force

2019-2023: Participated as a member of NOAA Columbia Basin Restoration Working Group; Participated as a member of EPA Columbia Basin Toxics Reduction Work Group to implement CRBRA, completed Estuary Partnership States Cooperative Agreement.

2019-2024: Participated in Oregon Ocean Acidification and Hypoxia Network meetings

2019-2024: Recurring Meetings with the WA Recreation and Conservation Office

2019-2024: Recurring meetings with Washington Department of Ecology

2019-2024: Washington Coastal Hazards Resilience Network, Partner

2020: Presentation to Rotary Club of Camas-Washougal about Steigerwald project Update.

2020: Presentation to the Clark County Nature Network

2020: Presented to East Fork Lewis River partnership Mtg. about restoration projects at EFLR

2020-2024: ANEP, Board member, Secretary/Executive Committee

2020-2024: Clean Rivers Coalition Steering Committee

2020-2024: Collaboration with CREST

2020-2024: Collaboration with Tillamook NEP

2020-2024: Columbia River Basin Restoration Working Group

2020-2024: Lower Columbia Solutions Group

2020-2024: Participated in EPA's Columbia River Toxics Reduction Working Group

2020: Worked with Wild Diversity on the Lower Columbia River Water Trail Ambassador Trip Leading Program. Contracted with Verde Builds on the construction of two stormwater facilities (ClackaCraft and Vernon School Phase II). Provided Environmental Education to participants in Central City Concern's Community Volunteer Corps.

2020: Presented status of habitat restoration and climate smart conservation in lower river to Upper Columbia Salmon Recovery Board biennial technical conference.

2021-2023: Participated in the four-state Columbia Basin Collaborative

2021: Presented climate smart conservation practices and need to shift restoration techniques to adapt for recurring excessive weather events at Restore America's Estuaries and Puget Sound Action Team conferences

2021: Completed Storymap and video with OWEB funding to make publicly available the story of the Horsetail Creek restoration project using our monitoring data.

2021: Increase partnerships and funding for North Clackamas Watershed Council and Blueprint.

2021: Presentation to Clark County (WA) staff about collaborative projects in Clark County

2021: Presented a Steigerwald update to the Rotary Club of Camas Washougal

2021: Sandy River Delta Partners

2021: Worked with Wild Diversity on the Lower Columbia River Water Trail Ambassador Trip Leading Program. Contracted with Verde Builds on the construction of two stormwater facilities (ClackaCraft and Vernon School Phase II). Provided Environmental Education to participants in Central City Concern's Community Volunteer Corps.

2021-2023: Participated in the four-state Columbia Basin Collaborative

2022: Completed a Storymap of Steigerwald Reconnection Project.

2022: Presentation about Estuary Partnership/LCFRB/CCCWRF Projects to WA State Salmon Lead Entities meeting

2022: Presentation about Stormwater Infrastructure projects/work to Stormwater Partners of SW Washington

2022: Presentation to the Clark County Clean Water Commission

2022: Produced interactive storymap for the Steigerwald Reconnection Project

2022: sponsored a session of Confluence Field School including 10 EP staff

2022-2023 Participated as a steering committee member of PMEP

2022-2023: Participated as a member of the EPA-ANEP Climate Resilience Working Group

2022-2023: Participated as a steering committee member of Follow the Water

2022-2023: Worked with Confluence and Greg Archuleta of the Confederated Tribes of Grand Ronde to increase First Foods at the Sandy River Delta.

2022-2024: Lower Columbia Nature Network

2022: Completed the organization 3-year DEI Strategy and implementation plans

2022-2023: Participated as a member of the EPA-ANEP Climate Resilience Working Group

2022-2023: Participated as a steering committee member of Follow the Water

2023: Hosted the multi-day CREC (Columbia River Estuary Conference) in Astoria, OR with 175 attendees.2020: Conference planning was well underway, but the conference was canceled due to COVID 19 pandemic.

2023: Collaboration with USFWS Urban Refuge Team

2023: Completed the Estuary Partnership Equity Plan and mapping.

2023: Five staff members attended the Restoring America's Estuaries conference in New Orleans

2023: Five staff members attended the Restoring America's Estuaries conference in New Orleans

2023: Participated as a member of the EPA-ANEP Climate Resilience Working Group

2023: Participated as a member of the EPA-ANEP DEI/EJ Community of Practice

2023: Participated as a steering committee member of PMEP

2023: Participated in Oregon Ocean Acidification and Hypoxia Network meetings Solicited members to present work at CREC

2023: Participated in the four-state Columbia Basin Collaborative

2023: Participated in the Lower Columbia Solutions Group

2023: Presentation to Camas Washougal Rotary Club about area projects

2023: Presentation to Clark College Professor Jodie Lesage's class

2023: Presentation to NW Toxics Summit on Green Infrastructure projects

2023: Presentation to Scappoose Bay Watershed Council on Riparian Revegetation

2023: Presented to the OWEB Board of Directors to provide a programming overview

2023: Three staff members participated in monthly "Confluence Next Steps" training to continue to learn about and support collaboration with regional Tribal nations and Indigenous peoples.

2023-2024: Collaboration with the Gorge Refuge Stewards

2023-2024: Land Care Collective

2023-2024: Led, with Washington Sea Grant, community discussions on sea level rise and community resilience in Baker Bay and Grays Bay (SW Washington).

2023-2024: Led, with Washington Sea Grant, community discussions on sea level rise and community resilience in Baker Bay and Grays Bay (SW Washington).

2023-2024: Oregon Department of State Lands Abandoned and Derelict Vessels Workgroup, member

2023-2024: Participated as a member of EPA Columbia Basin Toxics Reduction Work Group to implement CRBRA.

2023-2024: Participated in the Pacific Coast Lamprey Initiative as a signatory

2023-2024: Portland Harbor Collaborative Group

2023-2024: Scappoose Bay Watershed Council Advisory Committee

2023: Expanded programming partnerships to include project collaborations with CRITFC (for monitoring activities), Confluence (Education programs).

2023: Met with Congressional delegation members from Oregon and Washington and their staff to discuss the importance of the National Estuary Program, BIL workplans, and LCEP Accomplishments.

2023: Met with Washington State Legislators in Olympia to discuss restoration activities at the East Fork Lewis River.

2023: Participated as a member of EPA Columbia Basin Toxics Reduction Work Group to implement CRBRA.

2023: Participated as a member of the EPA-ANEP DEI/EJ Community of Practice

2023: Participated as a steering committee member of PMEP

2023: Participated in the Lower Columbia Solutions Group

2023: Participated in the Pacific Coast Lamprey Initiative as a signatory

2023: Sponsored a session of Confluence Field School. Sixteen staff members, and nine Board members and community partners attended.

2024: Hosted EPA Region 10 Administrator at Rigler Elementary School stormwater retrofit project

2024: Participated as a Steering Committee member of Follow the Water

2024: Participated in the EPA- NEP EJ Community of Practice

2024: Participated in the Lower Columbia Solutions Group

2024: Participated in the Pacific Coast Lamprey Initiative as a Policy Committee member.

2024: Climate Adapted Plant Materials Working Group, Member and presenter

2024: Collaboration with Amazon PDX6 on volunteer opportunities

2024: Collaboration with Cowlitz -Wahkiakum Council of Governments

2024: Confluence Collaborative Workshops on ITEK

2024: Developed and hosted a Storymap of restoration at EFLR Floodplain Reconnection project. 2022: Developed and hosted Storymaps of restoration at Steigerwald and Horsetail Creek as well as State of the Estuary online.

2024: Led, with Washington Sea Grant and Pacific Conservation District, community discussions on sea level rise and community resilience in Baker Bay and Grays Bay (SW Washington).

2024: Participated as a member in NANOOS

2024: Participated as a member of EPA Columbia Basin Toxics Reduction Work Group to implement CRBRA.

2024: Participated as a Steering Committee member of the PMEP

2024: Participated in Lower Columbia Watershed Council

2024: Participated in Northwest Power Conservation Council's Ocean Forum

2024: Participated in the Columbia River Basin Restoration Working Group

2024: Participated in the four-state Columbia Basin Collaborative

2024: Participated in the Policy Committee and Conservation Committees of the Pacific Coast Lamprey Initiative.

2024: Participated in the Spirit Lake Toutle Cowlitz River Community Collaborative

2024: Participated in Vancouver Lake Steering Committee Meeting

2024: Participation in panel presentation for the WA RCO Outdoor Learning Grant 23-25 Recipient Cohort Workshop

2024: Port of St. Helens, Pope and Talbot Clean Up Partner

2024: Presentation to the Port of Vancouver Port Commission on Vancouver Lake

2024: Rivers Need Room Steering Committee

2024: Spirit Lake Cowlitz Toutle River Collaborative

2024: Sponsored a happy hour event for the Portland Harbor Collaborative for a showing of their film the Blue River, and discussion with Indigenous leaders from the area. Twenty-two staff, board members, and partners attended.

2024: Sponsored a session of the Confluence Field School- seven staff members, 3 board members and 10 partners were able to attend.

2024: Sponsored the on-going iTeck partnership, The Land Care Collective, including support to hire a facilitator and provide two activities over the year – the Shwakuk Wetlands Healthy Harvest Field Trip, and Winter Storytelling at Tryon Creek State Natural Area.

2024: The Lower Columbia Estuary Partnership's Equity Plan was approved, December 2023.

Infrastructure Investment and Jobs Act (IIJA) Workplan Accomplishments and Outcomes:

The following section will highlight individual IIJA workplan accomplishments over the evaluation period. The accomplishments will be aligned within the three evaluation categories and include the role of the Estuary Partnership.

Healthy Ecosystems:

Campen Creek Reconnection Project (formerly the Upper Gibbons Creek/Mable Kerr project): the Campen Creek project is upstream from the Steigerwald Reconnection Project (spotlighted on page 8 of this report) and within a series of Estuary Partnership and City of Washougal stormwater management projects, including a major stormwater retrofit project partially funded by IIJA funds. The project is currently in permitting and will begin construction in mid-2025. The work at Campen Creek, coupled with the suite of stormwater retrofit work, creates a watershed approach to better protect the significant public investment at Steigerwald Lake NWR. The project not only serves as a key component to this watershed-wide approach, but it is also a multi-benefit undertaking and will provide enhanced recreation opportunities, improved water quality, flood control, and floodplain reconnection. The Estuary Partnership is the lead implementer on the Campen Creek Reconnection Project.

- Investment: As of September 2024, $196,143 of IIJA funds had been invested. $105,202 in NFWF funding was leveraged.
- Benefits of the Project:
    - Habitat Protection & Restoration for salmonids, lamprey
    - Increased Public access to nature
    - Deepened Community Engagement and Environmental Education opportunities
    - Resilience to recurring excessive weather events, sea level rise, and accelerating land loss
- Project Description:
    - This restoration project will reconnect Campen Creek to its floodplain and enhance habitat in 9 acres of public park located at the downstream extent of the urbanized portion of the Gibbons Creek watershed in Washougal, WA. The overall goals are to enhance instream, riparian, and wetland habitats within the site and to provide downstream benefits, such as reducing pollutant loading (including 6PPD), increasing base flows, lowering summer water temperatures, improving the water quality for salmonids and lamprey and bolster park visitor experience and connection to environment.
    - The project benefits coho salmon, steelhead, cutthroat trout, and two species of lamprey found in Gibbons and Campen Creeks, but also other salmonids from throughout the Columbia River basin that use the Steigerwald National Wildlife Refuge for off-channel rearing during outmigration through the estuary. The project will reconnect 3 acres of floodplain, realign the park's trail system by removing all trail infrastructure from the active floodplain, reconnect 3 acres of floodplain, and revegetate 9 acres of riparian and upland forests. This project is occurring in conjunction with other water quality improvement projects in the watershed that will treat runoff from a total of 30-acres of impervious surfaces.
- Estuary Partnership Role: Implementation Lead

Habitat Restoration: As of September 2024, this project primarily focused on work at the Horsetail Creek Thermal Refuge project. The project has evolved to provide critical funding for staff time, permitting, and design at several projects including Horsetail Creek, Multnomah Channel, Campen Creek, East Fork Lewis, and others.

- Investment: As of September 2024: $44,234 IIJA funds had been invested. Additional funding from EMSWCD of $74,092 and OWEB of $74,977 totaled $149,069 in leveraged funds.
- Benefits of the Project:
    - Increasing cold water rearing habitat for summer migrating Columbia River salmonids. Lack of cold water habitat has been identified as a critical limiting factor for recovery and preservation of endangered and threatened salmonid species. This project would address this limiting factor. The project, and others like it, are included in EPA's 2021 Columbia River Cold Water Refuge Plan.
    - Improving mainstem rearing habitat for juvenile salmonids in the lower Columbia River.
- Estuary Partnership Role: Implementation Lead

East Fork Lewis River Floodplain Reconnection Project: IIJA funds have contributed to the larger East Fork Lewis River project, particularly in the Ridgefield Pits section. The project is a large, multi-benefit floodplain reconnection project that will provide significant benefits of habitat and water quality, as well as increased recreation and access opportunities. This is one of the few undammed rivers in the area and is a wild steelhead gene bank river.

- Investment: $492,529 in IIJA funds invested as of September 2024. Additional funds including $712,420 from Washington RCO; $247,772 from Storedahl (private business); $105,555 from NOAA total $1,065,747 in leveraged funds.
- Benefits of the Project:
    - Habitat Protection & Restoration for salmonids, lamprey
    - Increased Public access to nature
    - Deepened Community Engagement and Environmental Education opportunities
    - Resilience to recurring excessive weather events and sea level rise
- Estuary Partnership Role: Implementation Lead

Inventory and Mapping of Ecosystem Services in the Columbia Estuary: is a research and mapping project that assesses the ability of specific habitats to provide ecosystem services. The Estuary Partnership is the lead implementer on this project along with partner OHSU and PSU researchers. As of September 2024, specialized stations that function like small self-contained weather stations, were located at two sites in the estuary to collect data related to the natural exchange of gases in specific estuary habitat types. Following data collection at these initial sites and subsequent sites over the life of the IIJA project, an assessment of the regulating services of these habitat types will be completed, including mapping, that can help guide future development and conservation in the estuary.

- Investment: As of September 2024, $570,416 in IIJA had been invested.
- Benefit of the project:
    - Inform the adaptive capacity of communities to be more resilient to recurring excessive weather events, sea level rise, and land loss.
    - Increased understanding of the ecosystem services of habitat types in the lower river.
- Project Partners:

    - The Columbia River Inter-Tribal Fish Commission (CRITFC) coordinates management policy and provides fisheries technical services for the Confederated Tribes and Bands of the Yakama Nation, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Nez Perce Tribe. The Coastal Margin Observation and Prediction (CMOP) program at CRITFC assists with the access and maintenance of the Eddy Flux tower near Tongue Point. The CMOP program uses a network of sensors and models to understand the linkages between the Columbia River estuary and the coastal ocean.
    - Cowlitz Indian Tribe: Wallooskee – Youngs Wetlands – home of the second Eddy Flux Tower – is managed by the Cowlitz Indian Tribe. Dalton Fry, Director of Natural Resources, and his team regularly assist with access and site maintenance. This has been an ongoing partnership since 2017 when these wetlands were first restored.
- Estuary Partnership Role: Implementation Lead

Clean Waters:

Green Stormwater Infrastructure: this is a compilation of stormwater retrofit projects and other green infrastructure projects throughout the study area. IIJA funding has been a fantastic vehicle to complete several stormwater projects that would have otherwise not been completed. Initially IIJA funding allows Stormwater staff to survey 34 sites, visit 21 sites, work with staff from 13 sites, and produce concept designs for 3 of those sites. Planned projects total approximately $4.95 million in combined IIJA and leveraged funds.

- Investment as of September 2024: $85,002 in IIJA funds, and $640,429 in leveraged funds from multiple sources including the City of Portland (multiple funds), WA Department of Ecology, Columbia River Basin Restoration Program, and Clackamas County
- Benefits of Project:
    - Improved Water Quality
    - Increased resilience to recurring excessive weather events
    - Reduction of heat islands
    - Education and community engagement
    - Added 221,292 square feet of stormwater treatment area
- Project Locations and Partners:
    - Terra Nova School – Partners; Depave, West Multiple Soil and Water Conservation District
    - Grattix Box Project – Partners – US EPA; City of Longview, WA; City of Woodland, WA; City of Rainier, OR; City of St. Helens, OR; City of Vancouver, WA; the Port of Vancouver; the Port of Longview; the Port of St. Helens; the Port of Woodland; the Port of Kalama; CCSWCD; Rainier (OR) Chamber of Commerce; Woodland (WA) Chamber of Commerce; Kalama (WA) Chamber of Commerce; ANC Movers; Five Rivers Construction; Oregon State University.
    - Baker Bay Ilwaco Stormwater Retrofit Project – Partners, City of Ilwaco and WA Ecology
- Estuary Partnership Role: Implementation Lead

Strong Communities:

Environmental Education: a compilation of various Environmental Education projects focused on work with and within economically depressed areas of the region. The projects encompassed the full suite of environmental science education that the Estuary Partnership offers including classroom science lessons, check out kits, field trips, and canoe paddling trips.

- Investment: Total of $97,262 in IIJA funds and $212,913 from multiple other funders.
- Projects, Partners, and Project Descriptions:
    - Cowlitz Education Outdoors – 356 youth participants and 50 Adult participants (teachers, chaperones):
        - The targeted schools have a majority of economically disadvantaged students, a high percentage of students with disabilities, and up to 17 percent of students who are English language learners. Science lesson check out kits were built and check out system coordinated through the Kelso Public Library for community and school access to science learning.
        - 3 Environmental science classroom lessons were provided to each student, as well as a 4 hour field trip. Each student received 7 hours of direct instruction to promote grade level science learning in accordance with state standards and to generate enthusiasm for STEM. Science kits on specific themes were also created and set up for check out by teachers and the public through the Kelso Public Library.
        - All students participated in Big Canoe paddling on Silver Lake during their field trips, co-benefit of this would be learning about non-motorized boating, waterway access, and boating safety -- particularly for communities with river access in their towns.
    - Big Canoe Paddle Programs – 1434 youth participants
        - Participants were able to access a local waterway, paddle a non-motorized craft, many who are first time paddlers, learn about water safety and lifejackets, join others from their community with similar interests and/or circumstances, learn about their local watershed and water quality impacts in urban environments.
        - Some of the programs had greater focus on water quality monitoring and provided education for participants to engage in water quality testing and learn through their findings in real time along with historical data.
    - Big Canoe Program Summer Staff Position – 1 summer position
        - This position funded a field-based educator focused on our Big Canoe programming to provide leadership and partner stewardship for all of our 2024 groups. 39 different community groups were engaged in the 2024 Canoe season, including Title I eligible public school students, low-income community/neighborhood groups, service-based organization cohorts that serve specific populations focused on disadvantaged communities.
        - The benefit of this position provided consistent leadership and partner communication and stewardship throughout the 2024 summer season.
        - This position improved programmatic operations through consistent logistics management and partner communication.
    - Students Outdoor Science Public School Education Program – 493 youth participants and 96 adult participants.

        - Classroom and field-based environmental education lessons were provided to Title I eligible public school students in Portland/Vancouver Metro communities. All class materials, direct instruction, student outdoor gear, and transportation funds were provided to participating schools.
        - The overall goal of our public school education programs are to support teachers and students by providing high quality, state curriculum aligned environmental science programming that invigorates students' love for science learning, interest in the natural world, and an understanding of environmental impacts, benefits, and our human role within our communities.
        - Students get to learn about careers in STEM and environmental fields and interact with various roles, from forest service to fish and wildlife to restoration ecologists.
    - A total of 2283 youth and 146 adults were engaged through IIJA supported educational programming.
    - Estuary Partnership Role: Implementation Lead

Clark County Urban Streams Project: The Clark County Urban Streams Project includes a variety of collaborative projects on Burnt Bridge and Salmon creeks in Clark County. The projects include a variety of riparian planting and community engagement and education work to increase community resilience to recurring excessive weather events, restore habitat, and engage community members.

- Investment: IIJA funds as of September 2024, $19,588,70.
- Project Description: This project combines two streams that have been ongoing sites for riparian restoration in the Vancouver Metropolitan Area. The project will expand the riparian planting and community outreach components in both creeks, and fund assessments to evaluate other potential restoration efforts.
- Estuary Partnership Role: Implementation Lead

The Landcover Dataset project: Is a project that will update the current landcover data layer and allow for full assessment of landcover characteristic changes since the last mapping update. This dataset is critical in allowing us to determine if we are meeting our habitat coverage targets, whether restoration is keeping pace with development, and where gaps remain.

- Investment: IIJA funds as of September 2024, $2,343.
- Project Description:
    - Monitoring ecological health and ecological change in the lower Columbia River. The data will be used in comparison to prior landcover data sets (2009 and older) to quantify how impervious surface and habitats have changed over time.
    - Data will be integrated into the NOAA Coastal Change Analysis Program database and will be available on Digital Coast
- Project Partner – NOAA
- Estuary Partnership Role: Implementation Lead

IIJA Overall performance through September 30, 2024:

- Total IIJA Investment $1,487,929.00
- Other funds leveraged - $2,173,360.00

- Added 221,292 square feet of stormwater treatment area
- A total of 2283 youth and 146 adults were engaged through IIJA supported educational programming.
- 3 river miles of habitat restoration underway, and 3 acres of additional floodplain reconnection
- 9 acres of riparian restoration underway

Topic 2: NEP Program Implementation:

NEP Administration and Governance Structure

Question: How does the NEP organizational structure provide a clear and transparent decision-making process for actions based on both stakeholders' priorities and good science, facilitate decision-making autonomy for the Management Conference from the host entity, and allow the NEP to be seen as a leader in watershed management? How is the NEP ensuring that its Management Conference includes input from diverse populations and interests?

Response: the Estuary Partnership is a nonprofit, 501c3, organization that does not have a host entity, further the Board of Directors serves as our Management Conference or Policy Board. The Board is populated by a range of experiences and expertise that represent our programming areas, range of estuary partners, and expertise to bolster organizational capacity. The range of experiences, expertise, connections, and representation that should be included on the Board is identified in the Board Development Plan. The Board at the end of the evaluation period had 19 members, to the right is the Board Profile from September 2024. The numbers in the "total" column represent the number of Board members who self-identified with that specific skills, knowledge, connection or expertise. There are additional demographic questions that ensure we have representation from both states and the entire study area, as well as a range of experiences to better inform Board decision making.

Board Member Skills, Knowledge, Connections, Representation	Total
Skills and Knowledge	
Strategic planning / thinking	10
Business operations	6
Fundraising, esp. major gifts	1
Finance	3
Human resources / org dev	4
Columbia River Basin	9
Climate change	7
DEI	8
Environmental justice	7
Education	3
Connections, Influence, Representation	
Federal agencies	5
Tribal government	6
State government	9
Local government	8
Port / maritime industry	2
Nonprofit / community	8
Real Estate/ Financial / investment sector	0
Business / corporate / industry	2
Research institutions	2
Funders	2
Major donors	0
Recreation	4

Decisions related to financial management, organizational policies, and oversight of the Executive Director, is under the authority of the Executive Committee of the Board, leaving the full Board to concentrate on guidance and decision making related to implementaiton of the CCMP.

The decisions of the Board are informed by the Science Work Group, the Estuary Partnership's technical and scientific body. The invite list to Science Work Group meetings is currently over 150 members long and with hybrid meetings, travel and distance are not barriers to attendance. Additionally, Science Work Group materials are publicly available on the Estuary Partnership website. The Estuary Partnership takes its role as "convenor" very seriously and works with a wide array of partners, communities, and technical experts throughout the region. We have earned our reputation for implementing quality science-based programming, but also for being one of the regional experts available to assist and to share our learning.

Question: How does the NEP's staffing structure and planning promote stability and continuity of succession within the organization?

Response: The Estuary Partnership has two primary program areas – Technical Programs and Community Programs. Within those two large programmatic areas reside more specialized teams. Within the Technical Programs team resides the Habitat Restoration Team and the Monitoring Team, as well as individual experts that work across the technical areas including the Chief Scientist, who also serves in the Director role for that programmatic area, the Physical Scientist, who provides a range of GIS, specialized mapping and research capabilities to the Technical team, and a Technical Contracts Specialist who is adept at managing the complexities of the technical contracting, procurement, and scope development. Within the Habitat Restoration Team there are Habitat Restoration Leads who develop and implement large and complex habitat restoration projects, and Principal Restoration Ecologists and Restoration Ecologists, who based upon their areas of expertise and experience may work as project managers on riparian restoration projects or smaller habitat restoration projects. The Monitoring Team is populated by Research Scientists at the I, II, or III level, each increasing in experience, expertise, and expectations. Within the Technical Programs area there is the ability for staff at lower levels of the organization to move up into positions of greater responsibility. The path of advancement is clear, and employees are provided with coaching, professional development, and opportunities for advancement.

On the other side of the house is the Community Programs area reside the Education Team, or Ed Team, Stormwater, Volunteer Programs, and Stewardship. The Ed Team is the only component of size with a hierarchy in roles from Environmental Educators I, II, and IIIs, Environmental Education Team Coordinators, and the Director of Educational Programming. As on the Technical Programs side of the organization, the path of advancement is clear, and employees are provided coaching, professional development, and opportunities for advancement. Stormwater, Environmental Stewardship, and Volunteer Programs are all smaller units under the direction of the Director of Community Programs. The Stormwater team, led by the Director of Community Programs also has a Stormwater Programs Specialist, and then draws additional assistance from the Stewardship and Ed Teams as needed or included in scopes of work. The Stewardship and Volunteer Programs team members generally work across the Community Programs area to assist with volunteer activities, riparian planting plans and implementation, site prep and maintenance, and providing surge capacity for Ed Team programming, particularly during the on-water paddling season. The path of advancement for the Community Programs team members who work on stormwater, stewardship and volunteer programming is less obvious than the for staff on larger teams. But the organization has a history and a willingness to engage in job description revisions and increasing role responsibilities alongside increases in staff member abilities.

The Admin, Finance, and Communications team work to support the overall mission of the organization and to provide ongoing administrative, financial, and communications support across all the teams. Much like the smaller units of the Community Programs area, many of the staff in administration, finance, and communications are the only individuals in their roles. There is no clear path of advancement, but there may be opportunities to expand roles, encourage leadership opportunities, and provide increased compensation for increasing role responsibilities.
The organizational structure of the Estuary Partnership is based on the ideal that the entire organization is working to serve the river. With programmatic people working to implement the CCMP

being the closest; admin, finance, and communications roles supporting the work of the programmatic teams, and the Board as the functional support for the entire organization. This ideal is illustrated in our Org Chart on the next page. Shading in the org chart shows the programmatic areas – blue for the technical teams and green for the community programs teams.
Stability within the organization and within the programmatic areas, especially, comes from the depth of the teams and longevity. Across the organization there is a combined 219 years of experience with an average tenure of 8 years.

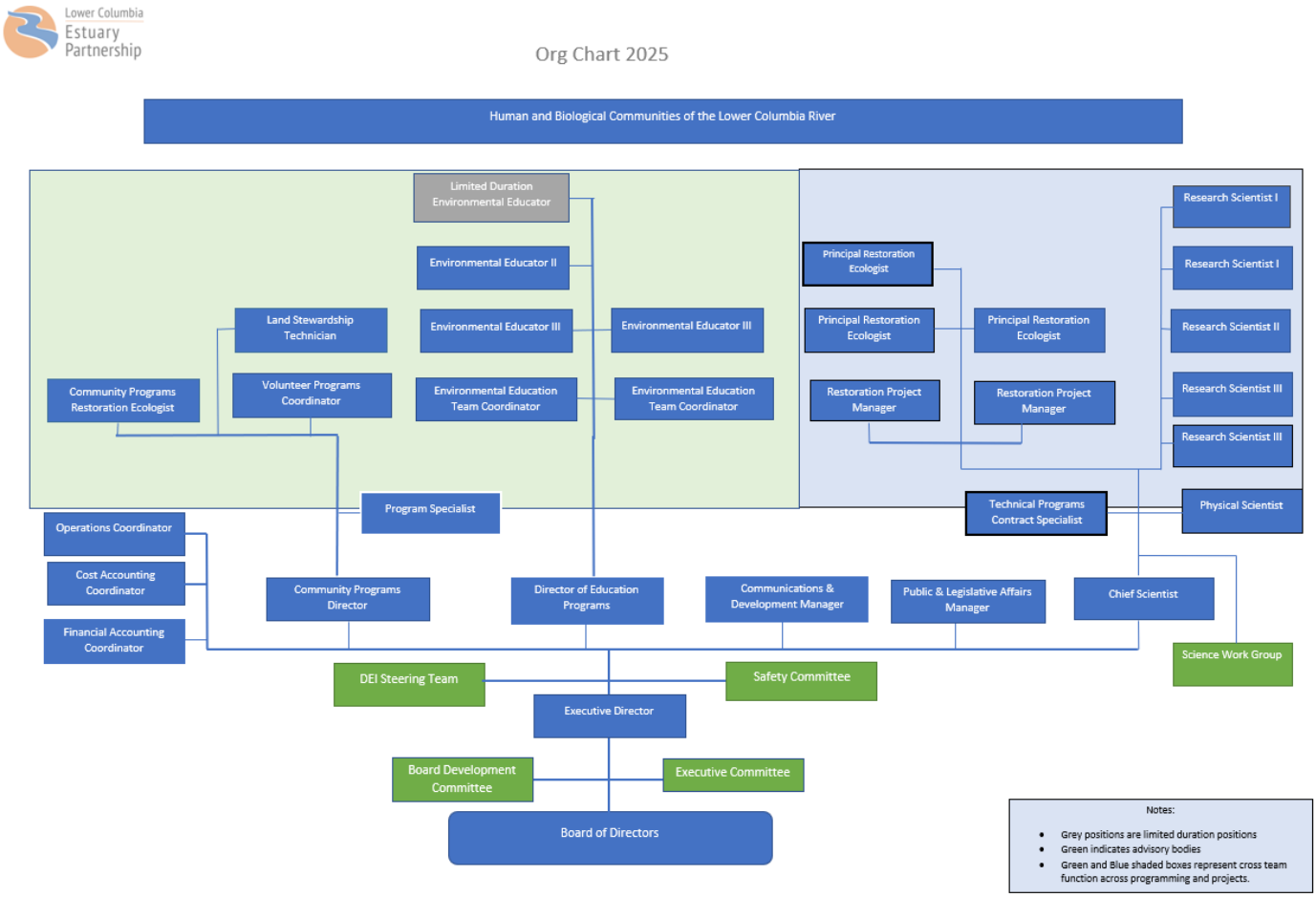


Figure 15 Org Chart

Question: How does the NEP plan to continue operations during emergencies?

Response: The Estuary Partnership has a Contingency/Emergency Planning Section in the Finance Policies. That section of the Finance Policies is geared primarily toward emergencies that may force a change in the regular work tempo including loss of our ability to access the office and office equipment and was tested during the pandemic which occurred during this evaluation period.
In practical terms, the Estuary Partnership has worked to ensure that all members of staff are able to work from areas other than the office, if that should be required, including a movement away from desktop computers to laptops and docking stations; a shift to cloud based systems such as Teams and

SharePoint for access to each other and files regardless of location; a shift to a digital payroll system that is connected to the cloud based accounting system, Quick Books Online, that the organization shifted to in 2023; and finally all of our banking has shifted to be as digital as possible. Essentially, we are able to maintain continuity of operations from any location – even if we are dispersed.

Question: Highlight particularly beneficial characteristics as well as areas for improvement.

Response: It is difficult to know what you don't know. We had the opportunity to test out the Emergency Operations Plan from the standpoint of an emergency that displaced our staff from the office environment during the pandemic, and we learned a lot about the need to have solid cloud-based infrastructure to support ongoing connectivity with each other and the work. This flexibility also serves us well during the predictably unpredictable weather of the Pacific Northwest which in the winter and spring can have us bouncing between floods and fires.

In recent years we have been building a solid culture of safety and have an active Safety Committee and try to plan for emergency events. Of great concern is accidents that may happen in the field to our staff or program participants and the potential impact on the organization. We have a crisis communication plan and methodology to try to manage the unforeseen, but it remains difficult to plan for everything. We do learn from our fellow NEPs and their experiences with displacement and other emergencies.

Grant Obligations and Finance

Question: Has the NEP consistently met all its EPA §320 (Base) and Infrastructure Investment and Jobs Act grant obligations?

Response: Yes, the Estuary Partnership has met its obligations under the EPA §320 funding as well as the IIJA.
The Estuary Partnership has made on-time filings of the following NEP-required documents:
EPA Base and IIJA Workplans

- 2019/21 EPA Base Workplan
- 2021/23 EPA Base Workplan
- Amended 21/23 EPA Base Workplan
- 2023/25 EPA Base Workplan

Annual NEPORT Reporting – Sent 3/24/2025 from K. Kutschenreuter
State of the Estuary Report (2020)

The EPA Regional Coordinator from R10 sat on our Board and Executive Committee as an ex officio member since the inception of the NEP. Other EPA R10 staff participate in Estuary Partnership activities such as the CCMP Update Retreat in February 2023, and various site tours and meetings. Each fall when there is a NEP Tech Transfer meeting the Estuary Partnership is in attendance. The Estuary Partnership was honored to host the NEP Tech Transfer meeting in November 2023. Likewise, every spring when there is a EPA/NEP spring meeting we are in attendance.

In early 2025 the Estuary Partnership completed the CCMP Update, and while that update is still under review, the work on the Update embodied the ideals of the NEP and included many voices from throughout the study area to identify updated actions, objectives, and targets for the lower Columbia.

Question: Have there been any challenges or problems encountered with cost sharing or

implementing its federal NEP award?

Response: There have been no challenges meeting the cost sharing requirements or implementing the Federal award. Generally, we have a pledge from the States of Oregon and Washington to provide base matching funds, which they do to some extent. As the EPA base funds have increased, the capacity of the States to provide the full match, as non-competitive funds, has been challenging, but there are additional state funds to draw from. Total EPA Base funds over the period were $3,562,500 with a total of $9,299,624 in State funds from Oregon and Washington.

Question: What were the sources of the required non-federal cost share of the NEP award?

Response: The source of the required non-federal cost shares was Oregon Watershed Enhancement Board (OWEB), which contributed $1,224,124 over the period. And the Washington Department of Ecology (SW Region) which has contributed $792,000 in base funding and a total of $8,075,500 overall, most through competitive grants.

Question: Have grant dollars been drawn down promptly in accordance with the terms and conditions of the grant for implementation of the EPA-approved workplan?

Response: Grant funds have been drawn down promptly in accordance with the T&Cs of the awards. We have requested and received no-cost extensions to extend the implementation period of the Workplans. While the funds connected to early workplans in this evaluation cycle were received relatively timely, that has not been the case since 2022. The EPA Base Workplan period of performance at the Estuary Partnership has been from July 1 to September 30. In 2019, the Estuary Partnership received the Agreement, and funding was available beginning August 2nd. In 2020 and 2021, the Agreements were received, and funding was available at the end of August. In 2022, the Agreement and funding were available the first of September. In 2023 the Agreement and funding were not available until the end of September. Fortunately, in 2024 our EPA Regional Coordinator allowed for a two-year award, so the second year of funding was available at the end of July. The years when awards are received late, it requires a shift in spending throughout the year and requires the requests to extend.

We are currently working with the Region to make longer Workplan periods the norm and will be working to shift the Workplan start date from July 1 to October 1 with the 2025 Workplan, to remove that concern.

Question: Are there strategies in place for obtaining additional funding beyond the EPA §320 (Base) and Infrastructure Investment and Jobs Act funds to implement CCMP actions (i.e., financial strategy)?

Response: The Estuary Partnership has been extremely successful developing successful projects and has realized over $53 million in funding over the evaluation period from federal, state, and local governments, foundations, private individuals, fee for service contracts, registration at Estuary Partnership events, investment earnings, and fundraising.

Question: Highlight particularly successful efforts and approaches as well as unique institutional challenges or difficulties in obtaining funding.

Response: The Estuary Partnership has been extremely successful in proposal development to support education, restoration, and stormwater efforts, identifying funding to support general operations is more challenging. Fortunately, EPA Base funds support the administrative and operational functions of the organization. We are successful enough in proposal development and securing funds for

programmatic needs so that we're less able to secure general operating support, and securing the funds necessary to maintain support for proposal development is also extremely challenging.

Budget Summary

Question: CWA §320 (Base) Funds- Provide a five-year tabular or graphic budget summary with an accompanying brief narrative showing how the EPA funding and match has been used since the last review (specific projects, NEP staffing, and other activities). Budget summaries that vary from the PE review period due to a state fiscal schedule constraint may be considered on a case-by-case basis if agreed upon by all PE team members and the NEP being evaluated.

Response: On the following pages is a Profit and Loss Statement for the period covered by this evaluation, July 1, 2019, through September 30, 2024. This period encompasses 5 full fiscal years for the Estuary Partnership and the 1st quarter of an additional year.

LOWER COLUMBIA ESTUARY PARTNERSHIP
Profit and Loss by Customer
July 1, 2019 - September 30, 2024

	Jul 2019 - Jun 2020	Jul 2020 - Jun 2021	Jul 2021 - Jun 2022	Jul 2022 - Jun 2023	Jul 2023 - Jun 2024	Jul 1, 2024 - Sep 30, 2024	Total
Income							
400 GOVERNMENT GRANTS							
400100 EPA	491,326.40	724,751.67	648,445.48	1,726,141.97	2,326,030.27	599,707.09	6,516,402.88
400200 NOAA			-172.24		105,555.43	79,942.26	185,325.45
400300 BPA	2,866,457.96	12,469,399.86	9,020,649.83	3,855,571.54	1,816,902.49	569,638.46	30,598,620.14
400500 USFS	39,159.66	22,038.90	33,752.94	14,089.27	67,540.74	2,257.83	178,839.34
410 State Grants							0.00
410100 Washington	1,267,210.55	2,042,241.37	1,928,427.69	1,358,722.41	1,195,632.88	283,265.40	8,075,500.30
410200 Oregon	161,525.64	345,643.32	261,129.07	231,021.26	174,240.52	50,564.04	1,224,123.85
Total 410 State Grants	**$ 1,428,736.19**	**$ 2,387,884.69**	**$ 2,189,556.76**	**$ 1,589,743.67**	**$ 1,369,873.40**	**$ 333,829.44**	**$ 9,299,624.15**
Total 400 GOVERNMENT GRANTS	**$ 4,825,680.21**	**$ 15,604,075.12**	**$ 11,892,232.77**	**$ 7,185,546.45**	**$ 5,685,902.33**	**$ 1,585,375.08**	**$ 46,778,811.96**
420 Other Grants							
420100 Restricted- Corp/Foundation	174,657.33	124,374.16	348,812.12	155,729.91	264,535.85		1,068,109.37
4500204 Nat'l. Fish & Wildlife Fdtn	36,856.99	587,288.07	1,068,171.88	182,245.03	314,332.67		2,188,894.64
Total 420100 Restricted- Corp/Foundation	**$ 211,514.32**	**$ 711,662.23**	**$ 1,416,984.00**	**$ 337,974.94**	**$ 578,868.52**	**$ 0.00**	**$ 3,257,004.01**
420300 Local Grants/Other Grants	361,918.29	283,198.62	468,844.75	345,733.19	694,890.88	88,135.77	2,242,721.50
Total 420 Other Grants	**$ 573,432.61**	**$ 994,860.85**	**$ 1,885,828.75**	**$ 683,708.13**	**$ 1,273,759.40**	**$ 88,135.77**	**$ 5,499,725.51**
430200 Unrestricted Corporate	1,375.00	16,900.01	3,730.00	4,526.00	7,750.00	0.00	34,281.01
Total 430 Contributions	**$ 1,375.00**	**$ 16,900.01**	**$ 3,730.00**	**$ 4,526.00**	**$ 7,750.00**	**$ 0.00**	**$ 34,281.01**
430100 INDIVIDUAL CONTRIBUTIONS	7,999.23	20,662.84	18,720.43	13,644.01	30,762.43	1,926.70	93,715.64
430300 ANNUAL DINNER & AUCTION	27,547.50		2,910.01	29,253.00	51,169.39		110,879.90
Total 430300 ANNUAL DINNER & AUCTION	**$ 27,547.50**	**$ 0.00**	**$ 2,910.01**	**$ 29,253.00**	**$ 51,169.39**	**$ 31,071.67**	**$ 141,951.57**
430400 CORPORATE CONTRIBUTIONS	48,100.00	26,810.00	21,800.00	33,693.77	4,936.90	6,673.95	142,014.62
440 Labor		0.00		0.00	-30,017.83		-30,017.83
440300 Sales-Consultation/Prof. Srvcs	70,673.66	34,595.95	28,575.89	41,430.05	46,188.65		221,464.20
440400 Registration-Conference/Event				100.00	386.84		486.84
Total 440 Labor	**$ 70,673.66**	**$ 34,595.95**	**$ 28,575.89**	**$ 41,530.05**	**$ 16,557.66**	**$ 0.00**	**$ 191,933.21**
450 INTEREST INCOME	5,172.12	313.14	265.04	3,896.98	4,255.94	1,981.73	15,884.95
455 Investment Earnings	53,613.19	97,664.54	-91,506.53	54,216.17	91,678.58	62,714.43	268,380.38
Total Income	**$ 5,613,593.52**	**$ 16,795,882.45**	**$ 13,762,556.36**	**$ 8,050,014.56**	**$ 7,166,772.63**	**$ 1,779,557.66**	**$ 53,168,377.18**

Figure 16 Revenue July 1, 2019 - September 30, 2024, All Sources

Expenses							
500 Project supplies and equipment	126,903.71	109,862.39	158,898.37	794,046.39	78,918.33	39,306.56	1,307,935.75
501 GAAP Expense	-19,850.00		-5,780.00				-25,630.00
503 Loan Interest		3,059.22					3,059.22
510 Bus Transportation (Students)	9,148.21	120.74	5,436.87	11,941.98	18,744.54		45,392.34
511 Participant Costs		2,350.00					2,350.00
520 Travel	9,104.85	293.25	5,981.70	38,237.13	25,527.11	11,413.26	90,557.30
530 Office Supplies	11,127.90	1,981.71	5,631.16	5,174.59	5,981.79	1,114.86	31,012.01
540 Other							0.00
540100 Postage	1,572.90	1,466.44	1,311.29	1,148.03	228.44	91.66	5,818.76
540150 Conference/Training/Work Fees	7,438.09	5,335.00	10,652.90	19,313.36	19,122.77	1,809.00	63,671.12
540200 Telephone	11,157.25	10,594.46	9,576.43	7,104.30	1,576.44		40,008.88
540250 Legal Notices & Advertising	1,251.00	3,016.07	4,554.25	3,812.38	1,838.00	5,822.34	20,294.04
540300 Copying	6,446.19	7,333.18	5,164.37	4,081.79	3,717.55	746.08	27,489.16
540350 Dues & Subscriptions	11,335.90	9,189.88	8,271.19	11,893.21	18,415.83	5,822.34	64,928.35
540400 Facilities	116,213.46	119,247.87	186,901.76	248,120.18	264,371.15	62,239.92	997,094.34
540450 Ground Transportation				22.00	2,282.64		2,304.64
540451 Car Rental	2,542.95	22,115.05	11,015.87	223.39	371.59		36,268.85
540452 Taxi/Bus	73.61			492.40	1,061.72		1,627.73
540453 Mileage	15,289.48	15,835.34	30,780.90	30,922.83	29,813.94	8,910.34	131,552.83
540454 Parking	1,527.54	3,488.58	2,417.65	1,386.74	3,582.47	1,223.23	13,626.21
540455 Fuel	294.25	172.40	247.62	858.67	1,937.21	-1,335.57	2,174.58
540456 Car Maintenance	943.33	94.62	618.98	971.38	-7,329.78	1,386.16	-3,315.31
Total 540450 Ground Transportation	**$ 20,671.16**	**$ 41,705.99**	**$ 45,081.02**	**$ 34,877.41**	**$ 31,719.79**	**$ 10,184.16**	**$ 184,239.53**
540500 Moving Costs			10,417.00				10,417.00
540550 Repairs & Maintenance/Computer	31,917.78	46,872.07	60,730.55	109,996.40	40,226.37	6,304.75	296,047.92
540600 Professional Fees	58,273.72	46,199.81	72,132.07	36,243.30	65,169.21	24,585.98	302,604.09
540650 Insurance	26,602.81	26,295.60	30,156.90	35,455.36	72,839.52	18,087.89	209,438.08
540700 Depreciation Exp	24,462.88	22,174.56	17,893.88	17,893.88	67,471.44		149,896.64
540800 Furniture and fixtures expense			39,525.01	4,503.00	10,845.33		54,873.34
Total 540 Other	**$ 317,343.14**	**$ 339,430.93**	**$ 502,368.62**	**$ 534,442.60**	**$ 597,541.84**	**$ 48,978.62**	**$ 2,340,105.75**
550 Contract Expenditures					11,840.00		11,840.00
550200 Computer Labor Maintenance	63,176.98	50,203.47	39,522.50	44,934.49	52,685.64	6,304.75	256,827.83
550300 Accountant	15,800.00	20,700.00	21,300.00	22,300.00	33,100.00	1,225.00	114,425.00
550400 Legal	3,167.09	5,886.00	6,540.00	657.50	15,779.50	150.00	32,180.09
550500 Meeting Expenses	6,120.63	2,182.91	2,827.77	2,199.88	3,253.07	727.26	17,311.52
550600 Special Projects	0.00	0.00	250.00	3,384.00	5,113.82	8,744.72	17,492.54
550700 Graphics	2,145.00	1,300.00	5,099.78	1,400.00	2,117.50	1,400.00	13,462.28
550800 Printing	1,344.38	1,187.77	461.59	5,116.17	1,009.71	-257.74	8,861.88
550900 Special Events	13,808.22	241.00	6,999.12	25,281.18	13,349.92	61.80	59,741.24
Total 550 Contract Expenditures	**$ 105,562.30**	**$ 81,701.15**	**$ 83,000.76**	**$ 105,273.22**	**$ 138,249.16**	**$ 18,355.79**	**$ 532,142.38**
560 Subcontractors (Grants/Awards)	2,845,545.27	14,095,922.78	10,724,978.26	4,007,883.58	3,170,470.45	789,748.82	35,634,549.16
Total 570 Payroll Expenses	**$ 2,195,273.71**	**$ 2,097,463.36**	**$ 2,447,866.49**	**$ 2,849,174.80**	**$ 3,305,298.04**	**$ 983,967.64**	**$ 13,879,044.04**
Total Expenses	**$ 5,600,159.09**	**$ 16,732,185.53**	**$ 13,928,382.23**	**$ 8,346,174.29**	**$ 7,340,731.26**	**$ 1,189,852.23**	**$ 53,137,484.63**

Figure 18 Expenses July 1, 2019 - September 30, 2024 - All sources

Year	NEP	Total $ Leveraged	Annual Allocation	Primary Ratio
Role Name : Primary				
2020	Lower Columbia Estuary Partnership	$14,421,726	$600,000	24
2021	Lower Columbia Estuary Partnership	$15,791,246	$662,500	23.8
2022	Lower Columbia Estuary Partnership	$8,515,775	$700,000	12.2
2023	Lower Columbia Estuary Partnership	$11,286,195	$750,000	15
2024	Lower Columbia Estuary Partnership	$5,084,231	$850,000	6
		$55,099,173	**$3,562,500**	**16.2**

Figure 17 Leveraged funds over evaluation period (Credit EPA)

Infrastructure Investment and Jobs Act Funds

Project Name:	Total IIJA Funds Invested to Date	Additional funds leveraged	Total Investment
Inventory and Mapping of Ecosystem Services	$ 570,416.26	$ -	$ 570,416.26
Campen Creek Reconnection Project	$ 196,143.00	$ 105,202.00	$ 301,345.00
Environmental Education	$ 97,262.00	$ 212,913.61	$ 310,175.61
Habitat Restoration	$ 44,234.00	$ 149,069.00	$ 193,303.00
Stormwater Green Infrastructure	$ 85,002.00	$ 640,424.98	$ 725,426.98
East Fork Lewis River Floodplain Reconnection Project	$ 492,529.00	$ 1,065,747.00	$ 1,558,276.00
Lower Columbia River 2023 Landcover Dataset	$ 2,343.00		$ 2,343.00
Total:	$ 1,487,929.26	$ 2,173,356.59	$ 3,661,285.85

IIJA funds are shown in the larger P&L above and are included in the EPA revenue line item. The spending per IIJA Project is shown below along with any leveraged funds. The chart in figure 19 shows the major expenses, those totaling more than $1000 per line item.

Figure 19 IIJA Funds Invested as of September 2024

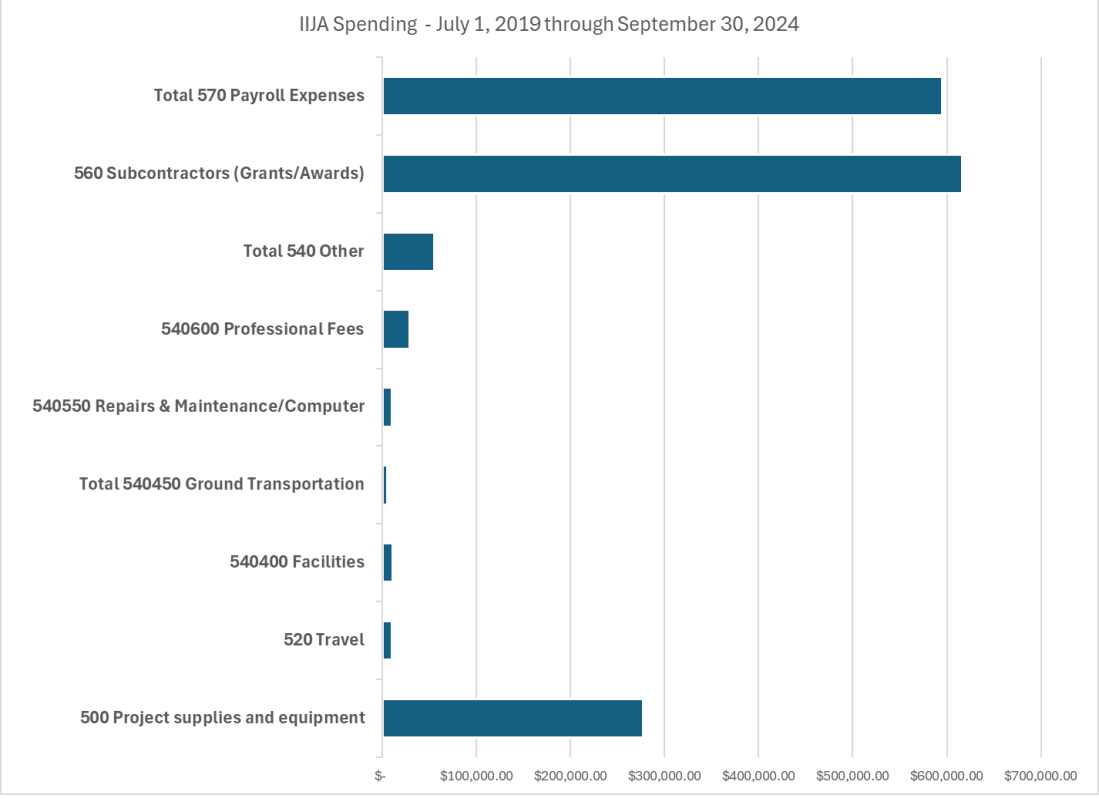


Figure 20 Major expenses by GL Code IIJA 2019-24

Opportunities for Improvement and NEP Priorities

Question: How has the NEP addressed challenges (referred to in this guidance as opportunities for improvement) identified in the previous PE?

> *Response:* The Estuary Partnership's response to the Challenges from the last PE are answered at the beginning of this document starting on page 6.

Question: What kind of obstacles, if any, has the NEP faced with CCMP implementation (institutional, etc.) and what has the NEP done to overcome those obstacles? How can the EPA (Regions/HQ) support the NEP's efforts to address these obstacles?

> *Response:* For the most part implementing the CCMP over the last five years has not presented any significant obstacles that haven't been long document, such as the lack of funding for long-term monitoring in the Columbia Basin. The complexities of the pandemic were challenging but where the Estuary Partnership's programming was impacted, the teams worked hard to find creative solutions and deliver programming in ways that worked with the restrictions and uncertainty of the time. R10 EPA has been an excellent partner in implementing the CCMP and we continue to welcome them to walk alongside as we all work to meet the goals of the CCMP.

Question: What difficulties or priorities does the NEP anticipate during the next five years?

> Response: As we navigate into 2025 the biggest obstacle we are encountering is uncertainty. Uncertainty of funding and wavering commitments to science are likely the two biggest difficulties. Ensuring that our organization is strong enough to withstand changing political and economic environments is key. We will continue to implement the organization, administrative, financial, and operational improvements that we need to be as efficient and effective as possible. As we look ahead to where we want to be in five years as it relates to the CCMP, we want to have the data, assessments, and mapping complete that will update our understanding of the conditions in the lower Columbia including our updated landcover dataset, and quantification and identification of priority habitat status in each of the reaches, so we know where we are in relationship to our habitat targets and that data can better guide our efforts.

Topic 3: NEP Ecosystem and Community Status:

The following information shows how the NEP applies and connects the everyday work of the NEP with the foundational goals of the CWA and the EPA priorities for achieving them. Please fully address all the topics and associated questions clearly, providing details about *how* progress and outcomes are being achieved rather than yes/no responses.

Community and Stakeholders Engagement

Question: How does the NEP ensure that the public has access to the decision-making process and engagement opportunities?

> *Response:* The Estuary Partnership engages with community members and partners in a variety of ways, all are explored throughout this report. The Estuary Partnership encourages engagement in a variety of ways and engages with communities in ways that they choose such as attending meetings with them, meeting them at their property or project sites. And we engage with community members in unique ways that offer the opportunity to listen and learn while we're hosting community paddles, working with PTA groups at stormwater project sites, planting trees in communities, or listening to community members share their stories about flooding.

Question: How has the NEP engaged community members and stakeholders in the NEP study area?

> *Response:* The Report includes full descriptions of each of these methods as well as examples, but generally we use the following engagement methods:
>
> - Project list servs
> - Social media
> - Story maps
> - The Estuary Partnership website
> - Director's eUpdate
> - Columbia Connections Newsletter
> - Project site tours
> - Public Speaking engagements

Question: What is the level of engagement between the stakeholders and the public?

> *Response:* We believe that the level of engagement is good. We can see that our eUpdate and Columbia Connections newsletter are opened and forwarded. We can also see that other electronic communications are well read and often forwarded. When we host events, they are well attended. We had to cancel and reschedule large events during the pandemic but were still able to engage with over 1600 partners and community members in technical programs and over 3500 community members in a variety of outreach activities.

Question: Where and how could the level of engagement be improved?

> *Response:* In this upcoming 10-year implementation period, one of the challenges to staff that we will be tracking is the development and implementation of project specific communications plans, particularly communications plan that tie in elements of education and stewardship with habitat restoration projects. While our engagement is good, the additional focus on maximizing focus at the

community-project level will likely provide more opportunities to more deeply engage community members.

Education and Outreach

Question: How is the NEP effectively promoting and creating widespread recognition of the Program?

Response: The Estuary Partnership's Environmental Education program is well known and well utilized, unfortunately we are not able to work with all the schools and classrooms that want us to work with them – there just isn't the capacity. This year, 2025, we will work with our 100,000th student – that is a significant milestone! We will continue to expand our range of free science education materials so that even the classrooms that we cannot work with can still benefit from our educational activities.

Question: What are some of the impacts of outreach and educational activities?

Response: The intended impact of outreach and education activities it to expand learning and connect people to the estuary. We believe that we achieve that intended impact. But there are other impacts as well including inspiring stewardship and a connection to place, changed behaviors such as a potential decrease in the use of plastics after attending a Science to Policy Summit on the topic, and getting community members onto the water in the Big Canoes often gives them a very different perspective on their communities. We also learn and are impacted by our experiences doing these activities, for example paddling with a group of women who are Afghani refugees and learning about how different their lives are now, or working with a group of landowners in SW Washington to hear about how their community has changed in the face of rising sea levels.

Question: What are some ways these activities could be improved?

Response: The one big way to improve them is to improve the reach and that is all about capacity. Increased capacity takes increased funding. In this time of uncertainty, funding is even more competitive than it is normally. We will continue to work to support our current programming level and make moves towards expansion when it is realistic.

Monitoring and Assessment

Question: How do the NEP's monitoring plan and indicators produce data to support a comprehensive and integrated analysis of environmental conditions (e.g., environmental progress report that communicates ecosystem status and trends, aka State of the Bay/Estuary Reports)?

Response: In 1999, the Estuary Partnership produced a long-term monitoring strategy that includes an overarching design for status and trends of ecological conditions to identify if CCMP actions implemented are making the desired impact and that conditions are trending in the correct direction. The Estuary Partnership and partners have been implementing aspects of that strategy since 2003 with Bonneville Power Administration funding. Additionally, through the Science Work Group and a series of workshops developed a suite of indicators that represent keystone species and critical issues to represent the conditions of the lower river. The Estuary Partnership reports on the status of these indicators every 5 years in a State of the Estuary report, the last of which was produced in 2020 and

was disseminated as a Storymap on our website. The reports can be found here: https://www.estuarypartnership.org/state-of-the-estuary

Questions: How does the NEP use monitoring results to re-direct management actions and programs implemented under the CCMP? How are research efforts used to identify missing data that warrant additional monitoring or sampling (if applicable)?

Response: The Estuary Partnership's Ecosystem Monitoring Program is the only monitoring of fish use, water quality, food web, and habitat conditions within the mainstem lower Columbia River. The Estuary Partnership collaborates with NOAA, Oregon Health & Science University (OHSU), and the University of Washington to track the status and long-term trends in water quality, habitat, food web, and fish use in the lower Columbia River and estuary at a suite of sentinel locations that reflect the estuarine-tidal freshwater gradient of the lower river. We use conditions at these sites for targets in the design for our habitat restoration projects as well as in comparison with action effectiveness data at restoration sites. Through the Ecosystem Monitoring Program, we maintain a Land/Ocean Biogeochemical Observatory (LOBO) platform in the mainstem Columbia River upstream of the Willamette River confluence. The LOBO platform provides the *only* measurement of water quality between the Bonneville Dam and Beaver Army Terminal at River Mile 45, which is now collaboratively managed by USGS, OHSU (through our contract), and the Columbia River Inter-Tribal Fish Commission (CRITFC) (CRITFC took on and now manages Coastal Margin Observation and Prediction [CMOP], the local assets for the Pacific Northwest affiliate of the Integrated Ocean Observing System). The program is funded by the Northwest Power Conservation Council/Bonneville Power Administration (NPCC/BPA) under the Fish and Wildlife Program.

Through this program, we identified that the mainstem lower Columbia is thermally homogeneous vertically and horizontally from Bonneville Dam down to approximately the Beaver Army Terminal (river mile 45). Because water temperatures in the mainstem continue to increase in severity and duration during important salmonid migratory periods, we developed a cold water refuge program, where we mapped refuges, identified gaps, and tested restoration and enhancement methods in filling gaps. This resulted in a pilot project at the Horsetail Creek confluence on the mainstem that we continue to pursue.

Results are also used for identifying, designing and monitoring restoration projects – *for example:* Findings on the elevation and inundation period where reed canarygrass thrives (invasive, nuisance species) are used in designing restoration projects by CREST, Columbia Land Trust (CLT), WDFW, Estuary Partnership, and others to reduce its occurrence at restoration sites. Hydrologic characteristics of estuary regions used to provide context for inundation anticipated at restoration sites by CLT, WDFW, Estuary Partnership, and others. Sites are used as reference sites for restoration projects by CREST, CLT, WDFW, Estuary Partnership, and others. In stream mainstem conditions used in determining nutrient enrichment, ecosystem metabolism, and "greening of river" (microdetritus versus plankton base of salmon food web)

Critically, this program allows us to continue to fill information gaps, improve our knowledge of the lower Columbia River and its role in supporting juvenile salmonids, and track changes to ecosystem structure and function under a shifting climate. We are just beginning to build a long-term dataset of conditions in the lower Columbia River that is essential in allowing us the ability to distinguish between variability associated with natural conditions and variability resulting from human influence and recurring excessive weather events. The programs are essential in providing critical information

including: the elevation and inundation period where reed canarygrass thrives for designing floodplain reconnection projects to reduce its occurrence; the hydrologic characteristics of estuary regions for predicting vegetation trajectories with the inundation anticipated at restoration sites; in-stream mainstem conditions for determining whether the system is nutrient-enriched; and to track and understand the impacts of shifting climate conditions, such as warming temperatures and potential encroachment of ocean acidification and hypoxia into the estuary with rising sea levels, on the ecology of the lower Columbia River.

The Estuary Partnership also manages an Action Effectiveness Monitoring (AEM) Program (see page 15 of this report) which focuses on providing pre- and post-restoration information on all restoration actions in the lower river. This program's objectives are to assess whether restoration actions are meeting partners' goals or whether future actions are necessary; allows us to assess on ecosystem scale the impacts and ecological uplift restoration actions are providing; identifies which actions are working best; and improve the efficacy of our actions. We monitor 5-8 restoration sites annually and coordinate the data collection of our partners at other sites. We compile, analyze and report all our action effectiveness data for the lower Columbia annually. We host regular Science Work Group meetings to share these results, resolve emerging issues, and identify methods for improving restoration success, as well as improving our monitoring.

The Ecosystem Monitoring Program is the *only systemic mainstem water quality monitoring station* above Beaver Army Terminal Center. OHSU's LOBO station was installed and maintained through this program and is now integrated into CRITFC's CMOP. This collaboration supports the Northwest Association of Networked Ocean Observing Systems (NANOOS). The CMOP station is important for modeling and predicting mainstem conditions for the Columbia River Treaty. *It is the only monitoring above Beaver Army Terminal and below Bonneville that tracks mainstem biogeochemical water quality conditions*.

Through the Ecosystem Monitoring Program, researchers have discovered that the lower Columbia River is a well-mixed system with similar water quality conditions from the water surface to the channel bottom. Additionally, we have found that water temperatures at our Camas CMOP station is the same as the temperature at the Beaver Army Terminal. This is critical information for understanding instream habitat conditions for salmonids and other species throughout the lower river. It led us to assess the implications of warming mainstem summer temperatures on returning salmonids and evaluate offchannel thermal refugia in the lower Columbia for returning salmonids. Summertime water temperatures in the Columbia River have increased steadily over the last several decades, and recent annual peak temperatures have exceeded 21 °C and have been as high as 24 °C. These already stressful summer water temperatures in the mainstem Columbia River are predicted to continue to warm and the length of that warm period is expected to increase. The warmest period typically occurs from late July to early September, coincident with substantial portions of the migrating fall Chinook salmon and summer steelhead runs. Steelhead and fall Chinook have been documented using off channel cold water refuges above Bonneville Dam for days to weeks in the warmer summer months. We secured US EPA funding to fill this research gap below Bonneville Dam, identified spatial gaps, which led us to test restoration techniques to fill the spatial gaps.

Clean Water Act Programs Relationship

Question: How does the NEP support the goals of the CWA? Highlight the best examples not already

identified in previous sections. An example does not need to be provided for each CWA Program listed below.

CWA Programs include but are not limited to:

- Strengthening Water Quality Standards
- Improving Water Quality Monitoring
- Developing Total Maximum Daily Loads
- Controlling Nonpoint Source Pollution on a Watershed Basis
- Strengthening National Pollutant Discharge Elimination Systems (NPDES) Permits
- Supporting Sustainable Wastewater Infrastructure

Response: One critically important role that we play and action that we take whenever possible, is to talk about how important it is to establish long-term commitment to long-term water quality and toxics monitoring on the Columbia, including the estuary. Members of the Estuary Partnership have been active participants for many years in various workgroups and collaborative efforts to increase toxics monitoring on the Columbia, the past Director and several Board members were instrumental in finding a champion and moving legislation forward to gain authorization for the Columbia River Basin Restoration Program and eventually appropriations. Monitoring funding in the lower Columbia is primarily from BPA and largely related to action effectiveness connected to habitat restoration. Additional funding tends to be competitive in nature and doesn't support the long-term, basin wide commitment that the Columbia so badly needs.

EPA Priorities

Question: How does the NEP incorporate relevant aspects of the EPA priorities into its workplans consistent with locally generated concerns? Highlight the best examples of where the NEP has made collective impacts not already identified in previous sections related to **CWA §320 (Base) funds or Infrastructure Investment and Jobs Act funds**. An example does not need to be provided for each priority area listed.

The EPA's Office of Water also has priority areas of interest relevant to the NEPs, included in the FY2025 –2028 National Estuary Program Guidance, as amended:

- Reduction in nutrient pollution to Protect Water Quality and Public Health Reduce Trash
- Make Resilience Investment to Address Recurring Extreme Weather Events (consistent with section 320(b)(4)(B) of the Clean Water Act)
- Engage All Communities

Response: Below are some of the ways that the Estuary Partnership has worked to incorporate EPA Priorities into workplans over the last five years, that aren't already highlighted in this report:

- CCMP Actions 14 and 15 – Advocated for the creation of the Columbia River Basin Restoration Program and its eventual funding, to fund toxics reduction and clean up in the Columbia basin.

- CCMP Actions 1,2,4,5,7,11,13,16 – Completed assessment and mapping of cold water refuges in the lower Columbia.
- CCMP Actions 1,2,4,5,7,11,13,16 – Updated habitat coverage targets to identify priority habitats by reach.
- CCMP Actions 13, 14- Significantly expanded the stormwater program.