# Request for Learning Program Project Proposals November 8th, 2021

# 2023-25 Investment Plan

**LEARNING PROJECTS APPLICATION SCHEDULE\* (Regional Feasibility and Predesign)**

| TASK | DATE | DESCRIPTION |
|------|------|-------------|
| Request for pre-proposals | November 8, 2021 | Publication of ESRP Learning Project RFP |
| Learning Program Informational Webinar | November 23, 2021 3:00 PM – 4:00 PM | ESRP will host an informational webinar to answer any questions about the Learning Program, Evaluation Criteria, and the application process.  Meeting Link Here. |
| Pre-proposals due | January 25, 2022 11:59 PM | **Pre-proposals will be submitted to this Box link as a .pdf file** with the applicant name_Pre-Proposal.pdf as the file name. e.g, Smith_Pre-Proposal.pdf |
| Initial review complete, invitation to submit full proposal | March 8, 2022 | An ad-hoc science team will review, evaluate, and provide feedback to applicants |
| Presentations to review team for invited full proposals | April 12-13, 2022 | Full proposal applicants will give presentations to the review team |
| Full-proposals due in PRISM | May 19, 2022 11:59 PM | Applicants invited to submit full proposals will submit according to materials provided once selected. |
| Written questions provided by reviewers | June 22, 2022 11:59 PM | Reviewers may submit questions to applicants to gain additional clarity and information regarding the proposed project |
| Written answers due from applicants | June 30, 2022 11:59 PM | Written answers to questions from reviewers are due from applicants |
| 2023-25 ESRP Preliminary Investment Plan Submitted | September 1, 2022 | Preliminary ranked project list and funding recommendations published and submitted to OFM. Ranked list submitted Governor in December. |
| Final investment plan | Spring 2023 | Determined by WA Legislature |
| Anticipated contract start | July 1, 2023 | First day of FY 2021 |
| Anticipated grant period | July 2023 - June 2025 | Biennium |

## ESRP NEARSHORE PROGRAM OBJECTIVES

The Estuary and Salmon Restoration Program (ESRP) is housed within the Washington Department of Fish and Wildlife (WDFW) and is jointly administered by the Recreation and Conservation Office (RCO) which functions as ESRP's fiscal agent. The mission of the ESRP is to *restore the natural processes that create and sustain the Puget Sound nearshore ecosystem.* We seek exemplary

projects of regional importance that advance learning about cutting-edge ecosystem restoration tactics and strategies for the **purpose of increasing the efficiency and effectiveness of future capital restoration projects**. Our work is centered on the scientific principles and ecosystem restoration strategies developed by the Puget Sound Nearshore Ecosystem Restoration Project (PSNERP).

The nearshore ecosystem of Puget Sound is a dynamic environment strongly shaped by physical and ecological processes. PSNERP guidance suggests that projects designed to protect and restore the ecosystem processes that shape and maintain nearshore structure will result in self-sustaining improvements in ecosystem functions, goods, and services, thereby justifying our capital investments in nearshore ecosystem projects [(Cereghino et al. 2012)](). The broad restoration objectives identified by PSNERP and used by ESRP include:

1. Restore the size and quality of large river delta estuaries and the nearshore processes deltas support.
2. Restore the number and quality of coastal embayments.
3. Restore the size and quality of beaches and bluffs.
4. Increase understanding of natural process restoration in order to improve the effectiveness of program actions.

**The most competitive ESRP learning proposals** will be those that directly support planning, design or implementation of [priority management measures]() (Clancy et al. 2009) and **actions that will most fully address the source of degradation of these natural processes or that are focused on protection of intact areas.** Strong proposals will also generate results that are **applicable across multiple geographies** within Puget Sound

## LEARNING AND ADAPTIVE MANAGEMENT

**Regional Feasibility and Predesign Projects** (learning projects) are necessary to *support restoration of large and complex ecosystems* or to *improve effectiveness or efficiency of a class of restoration or acquisition projects where there is uncertainty about ecological outcomes*. This component of ESRP's investment strategy aims to clearly identify the needs/problems to be addressed that will influence restoration and protection project development and selection in Puget Sound. ESRP learning projects will provide insight and analysis into the options available to solve complex problems leading to nearshore and salmon recovery in Puget Sound's nearshore. **We intend to fund efforts that use scientific methods during the 2023-2025 biennium to increase the efficiency and effectiveness of future ESRP program investments.** ESRP's learning project program is required by our authorizing program guidance, developed by the Puget Sound Nearshore and Ecosystem Restoration Project (PSNERP).

Strong learning projects improve our ability to select treatment locations and management measures, and help designers evaluate the consequences of alternative actions. We organize our learning by landform to consider the unique dynamics of delta, beach, and embayment ecosystems. Examples of past learning projects include development of design goals for delta channel formation, evaluation of how tide gate function affects estuarine fish passage, and assessment of density-dependent rearing

limitations of estuarine habitats for fish. Projects that require more than a biennium to achieve strong results shall be considered, but must compete with shorter duration efforts based on importance and applicability.

For our 2022 RFP we have identified a set of six broad learning project objectives.  We will review learning project proposals through a multi-step process, beginning with a pre-proposal due January 25th, 2022. We use a criteria based, peer-review process to inform a final scope and budget for selected efforts.

Learning projects have constituted approximately 10% of our biennial ESRP project portfolio. We anticipate that up to $2,000,000 will be available for learning project investments over the 2023-25 biennium, depending on final appropriations and proposals. Additional details and evaluation criteria can be found in Appendix A. For a complete set of ESRP's learning objectives see Appendix B.

## FUNDING OPPORTUNITIES

### ANTICIPATED FUNDING SOURCES

#### STATE FUNDING

This RFP will be used to develop the 2023 - 25 ESRP Investment Plan containing a ranked project list and funding recommendations. This investment plan will be used to direct 2023-25 state capital appropriations to sound conservation investments in Puget Sound. ESRP anticipates a $20 million request for the biennium, of which 10% will be made available for ESRP Learning Projects.

#### FUNDING PARTNERSHIPS

Establishing Awards for Funding Partnerships - The 2023 - 25 Investment Plan process and the resultant ranked project list can be used to identify funding opportunities through other state and federal partners (e.g., NOAA, PSAR, FEMA, PSP and EPA) as part of a coordinated investment strategy. ESRP has successfully leveraged supplemental funding from federal and state partners in the past to support projects on the ESRP funding list that align with the core criteria and goals of those partner programs.

#### OTHER 2022 ESRP FUNDING  OPPORTUNITIES

The Estuary and Salmon Restoration Program (ESRP) will release separate RFPs for ESRP's Acquisition and Restoration Grant program and for ESRP's Small Grant program in January 2022.

### AWARD AMOUNTS AND AWARD PERIOD

There is no maximum or minimum funding limit for proposed projects. However, funding is limited. The final award amount and scope may differ from those proposed and will reflect a thorough evaluation of investment plan alternatives and a project sponsor's readiness to complete work within

the award period.

Project awards are for work to be completed between July 1, 2023 and June 30, 2025, unless additional time is necessary and approved by the ESRP management team.

## PHASED PORTFOLIO FUNDING

ESRP strives to support project activities that can be completed within a 2-year time frame to align with our biennial budget cycle. However, we recognize that some projects require multiple years and phases to complete in order to fully achieve their goal.

To support phased funding, ESRP has developed a streamlined application or "portfolio" process for projects that: 1) have won an award in a previous ESRP grant competition, 2) during the previous biennium, worked together with ESRP to demonstrate the scope of their project requires more than 2 years for completion, and 3) have not substantively altered project scope. ESRP anticipates balancing new and existing project funding needs. *A given project may receive portfolio project funding for no more than one additional biennium beyond their original award. After 4 years, projects must participate in the "regular" technical review process along with all other new projects.*

Please contact the ESRP Science Manager (Tish.Conway-Cranos@dfw.wa.gov) to determine the eligibility status of your project in our Portfolio process and the required portfolio application material. Applications for portfolio learning projects must be received by the same application due date as the full proposal applications (see above schedule and timeline).

## ELIGIBILITY INFORMATION

### ELIGIBLE APPLICANTS

Applicants may be state, federal, local, or tribal agencies, non-governmental or quasi-governmental organizations, and private or public corporations.

### ELIGIBILITY CRITERIA FOR LEARNING PROJECTS

1. The proposed project is located within Puget Sound (East of Cape Flattery)

2. The proposed project need must directly support implementation of priority management measures and actions identified by PSNERP, a salmon recovery Lead Entity, a Shore Friendly Lead Organization, or Marine Resource Committee, and be listed in a current watershed, salmon recovery, or nearshore habitat restoration or protection plan.

3. The primary purpose of the proposed project must be to increase the efficiency and effectiveness of future capital restoration projects by informing the planning, design or implementation phases

of projects to restore or protect Puget Sound nearshore ecosystem processes or functions.

4. The proposed project must meet the Learning Project Evaluation Criteria described in Appendix A.

5. Project awards will not be provided for work that relieves obligatory compensation or mitigation requirements incurred by the sponsor or a third-party, as determined by the Puget Sound Nearshore Ecosystem Restoration Project or WDFW. Funding, however, may be provided for actions associated with compensation or mitigation, if those elements are above and beyond the mitigation requirements and can be easily isolated from the required mitigation activities.

## MATCHING REQUIREMENTS

ESRP requires that projects provide a match of cash or in-kind services equaling 30% of the ESRP award. This match must be incurred according to RCO policies. Some of this match must be non- state funds. Match eligibility will be determined on a case-by-case basis.  Match may include cash, bond funds, grants (unless prohibited by the funding entity), labor, equipment and equipment use (see RCO Manual 8 for restrictions), materials, staff time, and donations. All match must be an integral and necessary part of the approved project, must be eligible ESRP elements for the project, and must be committed to the project. Match expenses are reviewed for eligibility, and with the same criteria, that reimbursement requests are reviewed.

No funds administered by the ESRP may act as match for an ESRP grant.  Other funds administered by RCO may be used as match; consult with the ESRP/Salmon Project Manager to determine whether a specific grant may be used as match for the ESRP project.

## REPORTING REQUIREMENTS

Sponsors are required to enter two progress reports per year for all funded projects using the PRISM Online progress reporting tool.  Sponsors are also required to complete and submit a final report in PRISM Online at the completion of their projects. Through the online final report, sponsors essentially update their original application to provide a final project description, narrative, and information about the project scope, metrics, and costs.  Note that the online final report in PRISM is different from your detailed project deliverables.

## GRANT REIMBURSEMENT

RCO pays sponsors through a reimbursement process. This means that sponsors will not receive a lump sum grant in advance. Sponsors must provide documentation for all expenditures before receiving compensation. Sponsors must provide documentation for all match.  RCO requires a minimum of one billing a year and a maximum of one a month. RCO *Manual 8- Reimbursements* describes RCO reimbursement policies and procedures.

## ELIGIBILE COSTS

All project costs and donations submitted for reimbursement or match must directly relate to the work identified in the grant agreement and be considered reasonable, necessary, and eligible.

Indirect Costs:  The ESRP program allows indirect costs for learning projects. Project applicants that plan to bill for indirect charges need to provide RCO documentation that confirms their indirect rate prior to their project going under agreement.  For indirect costs to be eligible, select the "Agency Indirect" work type on the metrics page of your full application and enter an associated cost.

Pre-Agreement Costs: Generally, RCO will not reimburse costs incurred before the project start date of the grant's project agreement. However, certain pre-agreement costs within the project scope may be eligible for reimbursement (or to be used as match) if approved by the ESRP management team in writing.

## CULTURAL RESOURCES COMPLIANCE

Governor's Executive Order 21-02, Archaeological and Cultural Resources, directs state agencies to review all projects for potential impacts to cultural resources to ensure that reasonable action is taken to avoid, minimize, or mitigate adverse effects to these resources.  The federal government, through Section 106 of the National Historic Preservation Act, requires the same compliance for projects with federal involvement, for example, projects on federal lands, with federal funds, or those that require a federal permit. RCO facilitates review under the Governor's executive order. The appropriate lead federal agency facilitates review under the National Historic Preservation Act. Both processes require review, analysis, and consultation with the Washington Department of Archaeology and Historic Preservation and affected Native American tribes.

After the initial consultation, a funded project may be required to complete further cultural resources review and continue the consultation process to determine next steps. Those most likely to require additional review are those with ground-disturbing activities.  Examples of ground-disturbing activities sometimes associated with learning projects include **benthic sediment cores and data collection instrument installation.**

Costs for cultural resources review (survey, monitoring, etc.) are eligible for reimbursement and should be included in the grant application. Sponsors must complete the consultation process and satisfy all requirements before beginning any ground-disturbing activities (including demolition). Ground disturbance started without approval will be considered a breach of the grant agreement. Typically, cultural resources approval will be authorized as part of the notice to proceed.

## LEARNING PROJECT PROPOSAL PROCESS

**Pre-proposal Due** – Pre-proposals will be **uploaded as a pdf file to Box using this link** prior to midnight on **January 25th, 2022**. A pre-proposal is a two-page briefing describing the deliverables, scope, estimated costs, and value of the proposed work (refer to the *Pre-Proposal Format* below for details). Files must be named with applicants last name_Pre-Proposal.pdf, e.g., Smith_Pre-Proposal.pdf.

**Initial review** – An ad hoc science review panel will identify how the project meets criteria, and ESRP staff will identify how the proposal could better interact with other regional activities. ESRP staff will flag projects that, as written, are likely to fall outside the narrow ESRP learning project objectives and criteria. A written response to the pre-proposal will be added to the proposal record and a subset of project applicants will be conditionally invited to submit a full-proposal.

**Oral Presentation-** Those applicants that are invited to submit a full proposal will be asked to deliver a short (10-15 minute) oral presentation of their project concept, methods, intended analyses and how the project will inform future restoration on **April 12th or 13th, 2022.** Reviewer questions following the presentation will help to guide the development of Full Proposals.

**Final Application Due** – Final applications for the learning program,including a full proposal (refer to the *Anticipated Full Application Format* below for details) and other application materials, must be submitted via **PRISM Online** before midnight on **May 19th, 2022.** Final applications should address the comments and conditions raised by reviewers during the initial review and oral presentation. If reviewers have questions for the applicants regarding their final applications, these will be provided in writing to the applicants on **June 22, 2022.** Written answers will be due from applicants on **June 30th , 2022**.

**Final investment plan** - The ESRP ad hoc science review panel will complete a final ranking of projects and identify projects to include on the ESRP investment plan.

## APPLICATION REQUIREMENTS &   FORMAT

### PRE- PROPOSAL FORMAT

The pre-proposal provides a technical briefing on the scope, deliverables, and value of a scientific investigation. Please focus on the specific tasks that will be completed with proposed funding, project deliverables, and how that deliverable increases the efficiency or effectiveness of capital project work.

**The following elements should be contained within a single two page PDF file.**

   a. **Title.** A descriptive and precise proposal title (stating what, where and why)
   b. **Cost.** The estimated cost of the project, including your estimated ESRP request and match.

c. **Abstract**. A less than 100 word description of the work that explains who, what, where, and why.
d. **Contact Information**. Phone, e-mail contact information and affiliations for project applicant and any proposed partners
e. **Start date and end date for learning activities.** If the proposal is part of a larger project provide a precise 50 word description of that relationship.
f. **Tasks**. A less than 500 word description of the **tasks** that will be completed between the start and end dates.
g. **Deliverables**. A less than 250 word description of the **deliverables** that would be generated by the project, including any anticipated analytical products and the form that they would take.
h. **Application to capital restoration or protection** A less than 250 word description of the **restoration project types, settings, and specific capital project decisions** to which the new information would be applied to improve capital project performance.

Additional details and evaluation criteria can be found in [Appendix A](#). For a complete set of ESRP's learning objectives see [Appendix B.](#)

## ANTICIPATED FULL APPLICATION FORMAT

Final applications for the learning program (including a full proposal and other application material) must be submitted **via PRISM Online. Full instructions will be sent to applicants who are invited to submit a full proposal.**

**A.** Full Proposal Narrative

The cover page, and outputs and outcomes sections are similar to those requested in your pre-proposal. You may revise and reuse your pre-proposal text as appropriate based on reviewer feedback. Please fully communicate your ideas using as few words as possible—the word counts are maximums, not recommendations. Your full proposal narrative should include the following elements:

- **A cover page**
- **Technical information**
- **Outputs and outcomes**

**Cover Page** – Consisting of the following information:

1. **Title. A descriptive and precise proposal title –**A project title should be very short and describe the purpose of the work in language that can be broadly understood. We will likely give your project a 1-3 word nickname as we talk about it with others, so suggest one if you like.
2. **PRISM project #.**
3. **Cost. The estimated ESRP cost of the project** and anticipated matching funds
4. **Abstract**. A less than 100 word description of the work that explains who, what, where, and why. This description is important for communicating to stakeholders about your proposal. Keep it short and simple.

5. **Contact information.** Phone and e-mail contact information and affiliation for project applicant and any proposed partners
6. **Start date and end date.** If project work depends on ESRP funding the start date should be after July 1, 2023. If the proposal is part of a larger project provide a 50-100 word description of that relationship.

**Technical Information**

1. **Problem Statement (<500 words)** – Describe the specific problems faced by capital project sponsors that your work will resolve. Problems include our inability to efficiently select or design effective projects, or where stakeholder conflict stemming from lack of knowledge prevents implementation.
2. **Hypothesis Statement (<500 words)** – Identify the ecological or social phenomena that you will study to solve the problem, and what we know or don't know. Make predictions about what you think is likely to be true, and identify what sources of uncertainty you will either account for or explore.
3. **Methods and Efficiency/Technical Merit (<1000 words) –** Explain how you will collect measurements or evidence to test your hypotheses and solve the problem.  Describe:
   a. **Sampling approach (if applicable)**. How are you generating unbiased representative samples in order to make an inference about your hypotheses?
   b. **Specific methods and technologies** used to collect quantitative data. Cite evidence that the methods are sufficiently accurate and precise.
   c. **Intended statistical analyses** that will be used for hypothesis testing or prediction.
4. **Budget Narrative (<750 words)** - Justify the total project costs described in the associated budget worksheet.
5. **Map (<2 pages)** – provide a map or diagram if that will help describe the scope of your work, your sampling design, or the phenomena that you are observing.

**Outputs and Outcomes**

1. **Task Description (<750 words)** - List the tasks that will be completed between the start and end dates. Learning project tasks typically include, project plan development, data collection and processing including interim and final results analysis, wiki page development, various kinds of communications, and project management. Applicants who are invited to submit a full proposal will be sent a Learning Project SOW Template for an example of the task descriptions we anticipate being part of a typical learning project.
2. **Deliverables (<500 words)** – Describe the deliverables that would be generated by the project. How will the results be synthesized? Describe analytical products and the form that they would take.
3. **Application to Capital Restoration or Protection and Policy Impact (<1000 words)** – Describe how deliverables will be used to **cause a change in how restoration and protection decisions are made**. Identify who will be influenced and the type of specific restoration decisions that will be affected.

4. **Transferability (<500 words).** Describe how the results of the project may be applied across Puget Sound geographies (e.g., sound wide, basin wide, delta wide, or across multiple shoreline process units).

B. **Budget Worksheet (XLS)** –
Please complete the associated workbook to describe you project costs. Follow the instructions therein. These will be provided to project sponsors who are invited to submit full proposals.

C. *Curriculum vitae* **(CV)** for key project personnel, along with a brief narrative describing the how each project participant is qualified to perform their identified role(s).

D. **Applicant Resolution and Authorization** (Word document; template available on ESRP website)

The applicant's governing body must pass a resolution that authorizes submission of the application for funding. This resolution will identify who may sign a contract and amendments on behalf of the organization. The Applicant Resolution and Authorization template will be provided to project sponsors who are invited to submit full proposals. The format of the authorization may change, but the text may not change. Only one form is required for each applicant, so long as each project name and number is included in the resolution. Forms filled out incorrectly, or unsigned, are not valid and will require revisions. For help, contact a RCO grants manager before signing the form. Secondary sponsors must also complete this form.

## INVESTMENT PLAN DEVELOPMENT

### INTEGRATING RANKED PROJECT LISTS

The ESRP review process results in integrated separate projects lists for each sub-program:
1. Ranked new project list
2. Ranked portfolio project list
3. Ranked learning project list
4. Ranked small grants project list
5. Shore Friendly local program funding request

The ESRP investment lists are "zippered" together with the top ranked portfolio project becoming the top ranked ESRP project, followed by the top ranked new project, then 2nd ranked portfolio project, and so forth. Learning and small grants projects will compete against other learning projects and small grants projects for a portion of ESRP's total appropriation that will be set aside for these opportunities. Shore Friendly's funding request to the legislature is integrated in incremental appropriation levels of $10 and $20 million funding request levels. All projects will be incorporated into a single whole ESRP project list according to the running total and the funding set aside for each sub-program (Learning 10% and small grants maximum of $500k - $700k). The ESRP ranked list is created to clarify the prioritized need for

nearshore restoration and protection projects during the legislative process. However, Learning Projects, Shore Friendly, and Small Grants investments will receive a pre-determined funding allocation based on the total ESRP capital budget appropriation. Contact the ESRP Program Manager for more information on the integration of multiple ESRP grant programs into one investment plan.

## APPENDIX A: LEARNING PROJECT EVALUATION CRITERIA

Five criteria are used to evaluate learning projects. If the review team finds that a proposal fails to meet any one threshold criteria they will defer funding for that proposal for that round, potentially referring the project to other funding sources.

| # | Criterion | Description | Threshold for Deferral | Evidence |
|---|-----------|-------------|------------------------|----------|
| 1 | Importance to Restoration (10 pts.) | Strong proposals have examined our ability to predict project outcomes, and have recognized uncertainty resulting in a risk of failure to achieve restoration goals. Projects will address or inform substantial uncertainties in restoration outcomes. | The proposal does not improve a low predictive ability or resolve uncertainties that affect the ecological, social, or economic success or failure of ESRP capital restoration projects. | • Review of existing literature, which may include consideration of recent un-published work.<br>• Identifies specific risk of failure associated with a capital project.<br>• Personal communication with restoration project sponsors |
| 2 | Efficiency (10 pts.) | Strong projects have identified an efficient pathway to obtaining new knowledge. Projects should be cost- effective, scientifically rigorous, and produce a clear deliverable within specific and disclosed time frame. | The proposed project is unlikely to reliably generate new and impactful knowledge in a known time frame. | • A timeline and budget for completion has been identified.<br>• A rigorous analytical method has been proposed including sampling strategy related to an understanding of the parameters in question.<br>• Factors affecting noise/signal ratio and temporal and spatial variation have been addressed.<br>• Project team has the necessary qualifications to successfully complete the work. |
| 3 | Policy Impact (10 pts.) | Strong projects specifically identify how different study outcomes might directly affect capital program policies and decision that affect future efforts. | The proposal does not relate to the actions that are anticipated to be funded by the ESRP program, or will not affect decision making. | • The project type affected is an important component of nearshore process-based restoration<br>• A specific decision point has been identified in the project selection and design cycle that will be affected. |
| 4 | Transferability (10 pts.) | Strong projects produce evidence that is broadly applicable to a wide range of similar ecological systems. | The learning is specific to an individual site and will not provide substantive benefits to decision making at other sites. | • Clear analysis of the representativeness of the study site within a population of sites.<br>• Strong isolation of factors and co- factors. |
| 5 | Learning Priority (5 pts.) | Strong projects address learning objectives defined in this RFP. | NA | • The proposal addresses the issues described in the learning objectives text. |

The following learning objectives reflect our program's current assessment of what kinds of learning efforts are likely improve our program efficiency and effectiveness. We will accept and review all eligible proposals. Full proposals that strongly align with one of these learning objectives may receive up to five additional points (out of a total possible score of 45 points).

**ESRP LEARNING OBJECTIVES**

## RIVER DELTAS

Delta project work has been focused on the removal or modification of levees and dikes. We anticipate that management of freshwater distributary flows may be critical to future restoration of delta systems. The following learning project topics will receive additional attention in the 2022 learning project review:

**D1. Delta System Scale Analysis of Habitat Function** – Some of the effects of restoration, such as hydrodynamics, sediment distribution, and salmon growth and survival, are best observed at the scale of a whole river delta system. A strong system-scale learning project will use analysis of system dynamics to inform the design and configuration of restoration efforts. Strong proposals will 1) identify how results of near term restoration projects may affect decision making around later projects, and 2) develop evidence that can be used to improve restoration decision making in other delta systems. Large scale investigations should 1) integrate and leverage the resources and activities of partners, 2) have specific deliverables that affect decision making, and 3) make good use of the sequence and scope of planned restoration treatments to isolate factors that affect restoration effectiveness. We commonly lack the ability to predict 1) the relative benefit of alternate restored system configurations for salmonid rearing, or 2) the resilience of system restoration strategies to sea level rise.

**D2. Critical Design Decisions Surrounding Levee Removal** – Levee and dike removal is our preferred management measure for delta restoration (Clancy et al 2009 ). There are multiple design decisions that affect project cost, and are based on assumptions about how habitats will evolve following dike removal.. A strong proposal would 1) leverage and synthesize existing regional and national work, 2) result in specific tools or guidance to inform design, and 3) make use of variable or phased restoration treatments or natural experiments to isolate the effects of specific design elements.

**D3. Planning for Multiple Benefits from Delta Restoration –** We lack agreement within agricultural deltas about desired future delta condition. Different stakeholders may have competing interests in flood risk management, development, agricultural viability, or restoration. We are interested in learning projects that 1) create opportunities for delta stakeholders to clarify their objectives, that 2) lead to economic, physical or ecological analyses of delta landscape management alternatives, that 3) result in restoration strategies that integrate restoration, flood management, and the resilience of agricultural economies within river floodplains. A strong effort would result in a set of

viable and broadly endorsed restoration projects. A strong proposal will be finite in scope and endorsed by diverse stakeholders.

## BEACHES

A limited but growing number of restoration actions restore beach sediment supply and are funded through the ESRP program. The majority of beach project funding has been used to acquire parcels with feeder bluffs prior to development, at a high cost. The following general topic will receive additional attention in the 2022 learning project review:

**B1. Identification of Beach System Targets** - Prior work has begun to integrate existing shoreline data to allow for more data-driven identification of beach systems most suitable for specific management measures and purposes (see [Beach Strategies wiki page](#)). Further development of this approach will help project sponsors to identify actions, and funders to evaluate projects. We would like to support development of beach decision support models that consider: 1) the specific tools to be employed, 2) the specific services that we aim to protect and restore, 3) the relative importance of different beach ecosystems for providing these services, 4) the anticipated effects of sea level rise and global climate change and 5) factors that create risk of failure. A strong effort will 1) leverage best available spatial data and be compatible with [beach strategies](#), 2) result in a Puget Sound-wide strategic overlay comparable to other similar efforts, and will 3) engage a range of stakeholders that are concerned about the beach services in question.

## EMBAYMENTS

A number of ESRP actions involve the restoration of coastal inlets and barrier embayments. Local assessments provide our primary basis for project selection. We have no tools for tracking our work compared to historical losses, or to estimate the relative value of different actions in the embayment landscape. The following learning project topics will receive additional attention in the 2022 learning project review:

**E1. Inventory and characterization of Puget Sound sub-estuaries for restoration** – Puget Sound has been identified as a single estuary of national significance. Within the Puget Sound are thousands of creek mouths, embayments, and inlets—each of which can be considered a sub-estuary within Puget Sound. Existing data provides the foundation for identifying and characterizing protected coastal wetlands and their associated watersheds. We have not developed a regional inventory of these units for tracking or planning. An inventory of sub-estuaries, and their relationship with adjoining beach systems and watersheds, is a necessary step in developing of sound-wide assessment methods, or for tracking restoration progress and potential. A strong proposal would result in 1) the development of a polygonal representation of Puget Sound sub-estuaries, and 2) relate these units to related beach systems and watersheds, and 3) characterize these units using best available data to support assessment for restoration.

**E2. Identification of Embayment System Targets -** Initial work has begun to integrate existing shoreline data to allow for more data-driven identification of beach systems most suitable for specific management measures and purposes for beach systems (see [Beach Strategies wiki page](#))

and we would like to expand this work to include embayments to help project sponsors to identify actions, and funders to evaluate embayment projects. We would like to support development of embayment decision support models that consider: 1) the specific tools to be employed, 2) the specific services that we aim to protect and restore, 3) the relative importance of different embayment ecosystems for providing these services, 4) the anticipated effects of sea level rise and global climate change and 5) factors that create risk of failure, 5) the relative importance of different embayments for nearshore salmonid rearing services and 6) factors that create risk of failure. A strong effort will 1) leverage best available spatial data and be compatible with existing [beach strategie](s), 2) result in a Puget Sound-wide strategic overlay comparable to other similar efforts, and will 3) engage a range of stakeholders that are concerned about the embayment services in question.

The following websites may provide additional information that supports your application:

| | |
|---|---|
| ESRP website | https://wdfw.wa.gov/species-habitats/habitat-recovery/nearshore/conservation/programs/esrp |
| PSNERP Publications | https://wdfw.wa.gov/species-habitats/habitat-recovery/nearshore/conservation/technical |
| PSNERP: Change Analysis Geodatabases | http://wagda.lib.washington.edu/data/geography/wa_state/#PSNERP |
| Puget Sound Partnership- Action Agenda | http://www.psp.wa.gov/action_agenda_center.php |
| Puget Sound Partnership- Salmon Recovery and Watershed Work | https://www.psp.wa.gov/salmon-recovery-overview.php |
| Puget Sound Nearshore Project Data Site | https://wdfw.maps.arcgis.com/apps/webappviewer/index.html?id=adfd521d37774e868e0e974cc03860df |
| Ecology Oblique Aerial Photography | https://fortress.wa.gov/ecy/shorephotoviewer/ |
| WA Dept. of Ecology Coastal Atlas | https://fortress.wa.gov/ecy/coastalatlas/tools/Map.aspx |
| Salish Sea Wiki Beach Strategies | https://salishsearestoration.org/wiki/Beach_Strategies_for_Nearshore_Restoration_and_Protection_in_Puget_Sound |

## CITATIONS

Bolte, J. and K. Vache. 2010. *Envisioning Puget Sound Alternative Futures. Prepared for, the Puget Sound Nearshore Ecosystem Restoration Project*. Department of Biological & Ecological Engineering, Oregon State University, Corvallis, Oregon, 50 p.

Cereghino, P., J. Toft, C. Simenstad, E. Iverson, S. Campbell, C. Behrens, J. Burke. 2012. *Strategies for nearshore protection and restoration in Puget Sound.* Puget Sound Nearshore Report No. 2012-01. Published by Washington Department of Fish and Wildlife, Olympia, Washington, and the U.S. Army Corps of Engineers, Seattle, Washington.

Clancy, M., I. Logan, J. Lowe, J. Johannessen, A.Maclennan, F.B. Van Cleve, J. Dillon, B. Lyons, R. Carman, P. Cereghino, B. Barnard, C. Tanner, D. Myers, R. Clark, J. White, C.A. Simenstad, M. Gilmer, and N. Chin. 2009. *Management measures for protecting and restoring the Puget Sound nearshore*. Puget Sound Nearshore Partnership Report No. 2009-01. Published by Seattle District U.S. Army Corps of Engineers, Seattle Washington, and Washington Department of Fish and Wildlife, Olympia WA.

Fresh, K. L., M. Dethier, C. Simenstad, M. Logsdon, H. Shipman, C. Tanner, T. Leschine, T. Mumford, G. Gelfenbaum, R. Shuman, and J. Newton. 2011. *Implications of observed anthropogenic changes to nearshore ecosystems in Puget Sound. Puget Sound Nearshore Ecosystem Restoration Project Report No. 2011-03*. Published by Washington Department of Fish and Wildlife, Olympia, Washington.

Shipman, H. 2008. *A geomorphic classification of Puget Sound nearshore landforms. Puget Sound Nearshore Partnership Report No. 2008-01.* Published by Seattle District, U.S. Army Corps of Engineers, Seattle, Washington.

Simenstad, C., M. Ramirez, J. Burke, M. Logsdon, H. Shipman, C. Tanner, J. Toft, B. Craig, C. Davis, J. Fung, P. Bloch, K. Fresh, D. Myers, E. Iverson, A. Bailey, P Schlenger, C. Kiblinger, P. Myre, W. Gertsel, and A. MacLennan. 2011.

*Historical change of Puget Sound shorelines: Puget Sound Nearshore Ecosystem* Project Change Analysis. Puget Sound Nearshore Report No. 2011-01. Published by Washington Department of Fish and Wildlife, Olympia, WA