



Request for Learning
Program Project
Proposals March 5th, 2020

2021
Investment
Plan

LEARNING PROJECTS APPLICATION SCHEDULE* (Regional Feasibility and Predesign)

TASK	DATE	DESCRIPTION
Request for pre-proposals	March 5, 2020	Publication of ESRP Learning Project RFP
Pre-proposals due	April 27 th , 2020 11:59 PM	Pre-proposals will be emailed in .pdf or MS Word® format to Tish.Conway-Cranos@dfw.wa.gov with the subject "Learning Pre-Proposal"
Initial review complete, invitation to submit full proposal	May 20, 2020	An ad-hoc science team will review, evaluate, and provide feedback to applicants
Presentations to review team for invited full proposals	June 17-18, 2020	Full proposal applicants will give presentations to the review team
Full-proposals due	August 4, 2020 11:59 PM	Applicants invited to submit full proposals will submit according to materials provided once selected.
2019 ESRP Preliminary Investment Plan Submitted	September 30, 2020	Ranked project list and funding recommendations published and submitted to OFM. Ranked list submitted Governor in December.
Final investment plan	Spring 2021	Determined by WA Legislature
Anticipated contract start	July 1, 2021	First day of FY 2021
Anticipated grant period	July 2021 - June 2023	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 efficiency and effectiveness of future restoration. 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. 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 effectiveness of program actions.

The most competitive ESRP learning proposals will be those that directly support implementation of priority management measures and actions that will most fully addresses the source of degradation of these natural processes or that are focused on protection of intact areas.

LEARNING AND ADAPTIVE MANAGEMENT

Regional Feasibility and Predesign Projects (learning projects) are necessary to *support restoration of large and complex ecosystems* subject to multiple projects, or to *improve effectiveness or efficiency of a class of projects where there is uncertainty about ecological outcomes*. This component of ESRP's investment strategy aims to clearly identify the need/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 2021-2023 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 project 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 should be proposed, but must compete with shorter duration efforts based on importance and applicability.

For our 2020 RFP we have identified a set of seven broad learning project objectives. We will review learning project proposals through a multi-step process, beginning with a pre-proposal due April 27, 2020. 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 2021-23 biennium, depending on final appropriations and proposals. Additional details and requirements 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 2021 ESRP Investment Plan containing a ranked project list and funding recommendations. This spending plan will be used to direct 2021-23 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 2021 Investment Plan process and the resultant ranked project list can be used to identify opportunities with other state and federal partnership funding mechanisms (e.g., NOAA, PSAR, FEMA, and EPA) as part of a coordinated investment strategy. Funding has been distributed in previous years to ESRP projects where other funding programs, core criteria, and project outcomes are in alignment.

OTHER 2020 ESRP FUNDING OPPORTUNITIES

The Estuary and Salmon Restoration Program (ESRP) is concurrently releasing a separate RFP for acquisition and restoration projects and for small grant funding, which anticipates having a minimum of \$500,000 - \$700,000 for small restoration grants.

AWARD AMOUNTS AND AWARD PERIOD

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

Project awards are for work to be completed between July 1, 2021 and June 30, 2023, unless additional time is required and approved by the ESRP management team.

PHASED PORTFOLIO FUNDING

ESRP provides awards for project activities that can be completed within a 2-year time frame as aligned with our biennial budget cycle. Project sponsors should develop proposals that can be achieved within that timeframe.

However, we recognize that some projects require multiple years and phases for completion of projects that: 1) during the previous biennium, worked together with ESRP to demonstrate the

scope of their project requires more than 2 years for completion AND have won an award in the last ESRP grant competition, and 2) 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 \(Tish.Conway-Cranos@dfw.wa.gov\)](mailto: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 all other project applications (see above schedule and timeline).

ELIGIBILITY INFORMATION

ELIGIBLE APPLICANTS

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

ELIGIBLE GEOGRAPHIES AND SCOPE

BASIC ESRP ELIGIBILITY

1. 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 or Marine Resource Committee, and listed in a current watershed, salmon recovery, or nearshore habitat restoration or protection plan.
3. The primary purpose of the project must be to restore or protect Puget Sound nearshore ecosystem processes or functions.
4. Projects with the primary objective of providing recreational access, or remediating chemical contamination are not eligible as stand-alone projects; however, these activities may be eligible components of larger efforts.
5. Projects 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.

ELIGIBILITY CRITERIA FOR LEARNING PROJECTS

1. Must not relieve a party of an obligatory requirement required for some kind of required mitigation or compensation.
2. Must be able to provide a cash or in-kind project match equal to 30% of the requested award.

MATCHING REQUIREMENTS

ESRP authorizing legislation has, to date, required 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.

ELIGIBLE 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.

The ESRP program allows agency 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.

LEARNING PROJECT PROPOSAL PROCESS

Review and final funding decisions will follow a timeline separate from the ESRP Restoration and Acquisition RFP, to increase the opportunity for collaboration and integration with on-the-ground project work, and to increase dialog among science, field, and policy communities about how scientific methods can be used to directly improve restoration and protection practices. For a detailed schedule overview, see the initial section of this RFP.

DEADLINE AND SUBMITTAL

Pre-proposal Due – Pre-proposals will be emailed in .pdf or MS Word® format to Tish.Conway-Cranos@dfw.wa.gov with the subject “Learning Project Pre-Proposal” before **midnight on April 27th, 2020**. A pre-proposal is a two-page briefing describing the deliverables, scope, estimated costs, and value of the proposed work.

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, and flag projects that, as written, are likely to fall outside the narrow ESRP learning project objectives. A written response to the pre-proposal will be added to the proposal record and a set of project proponents will be conditionally invited to submit a full-proposal. **Those proponents 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 **June 17th or 18th, 2020**. Reviewer feedback from this presentation will help to guide the development of Full Proposals.

Final Application Due – Final applications for the learning program (including a full proposal and other application materials) must be submitted via PRISM Online before **midnight on August 4th, 2020**. Based on the initial review, applicants are encouraged to submit a revised and more detailed description of proposed work, including a more formal and structured descriptions of cost, scope and deliverables, which respond to the conditions defined by the initial review.

Final investment plan - The ESRP ad hoc science review panel will complete a final ranking of projects, including the option of moving a proposal out of 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 or MS Word® file.

- a. A descriptive and precise proposal title (stating what, where and why)
- b. The estimated ESRP cost of the project.
- c. A less than 100 word description of the work that explains who, what, where, and why.
- d. Phone, e-mail contact information and affiliations for project proponent 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. A less than 500 word description of the **tasks** that will be completed between the start and end dates.
- g. A less than 250 word description of the **deliverables** that would be generated by the project, including the anticipated analytical products and the form that they would take.
- h. 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 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 should include the following elements.

- a. **A cover page**
- b. **Technical information**
- c. **Outputs and outcomes**

Cover Page – Consisting of the following information:

1. **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. See the enclosed summary of invited proposals for examples. 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. **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.
3. **Phone and e-mail contact information and affiliation for project proponent and any proposed partners**
4. **Start date and end date.** If project work depends on ESRP funding the start date should be after July 1, 2021. 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 control or explore.
3. **Methods (<1500 words)** – Explain how you will collect measurements or evidence to test your hypotheses and solve the problem. Describe:
 - a. **Sampling approach.** 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. **Statistical analyses** that will be made to test your hypotheses.
4. **Budget Narrative (<1000 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 (<1000 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 would the project result in a synthesis? Describe analytical products and the form that they would take.
3. **Policy Impact (<1000 words)** – Describe how deliverables will be used to cause a change in how we make restoration and protection decisions. Identify who will be influenced, and the specific restoration decisions that will be affected.

B. Budget Worksheet (XLS) –

Please complete the associated workbook to describe your project costs. Follow the instructions therein. These will be emailed to project sponsors who are invited to submit full proposals.

- C. Curriculum vitae (CV)** for key project personnel, along with a brief narrative describing 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 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.

E. Area of Potential Effect (APE) Map (Image/Word document) –

NOTE: This attachment is only required if project includes ground-disturbing activities. Examples of learning project ground-disturbing activities include benthic sediment cores and data collection instrument installation.

RCO starts cultural resources review and consultation early in order to help keep projects on schedule. To do this RCO requires project applicants to provide a map showing the project's area of potential effect. This map should show the location of all proposed ground-disturbing activities, including access and staging areas. The map must include the RCO project number and title, sponsor name, a polygon of the entire project area, and **must include section, township, and range information**. A U.S. Geological Survey quad map is the preferred base map, though the applicant may use an aerial base map, as long as section, township, and range information are included on the map. Section lines and numbers must be clearly visible in the map. Note that small-scale projects may need to attach more than one map—one zoomed out far enough to depict section lines and numbers, and another zoomed in close enough to clearly depict the boundaries of all proposed ground-disturbing activities. Applicants will be asked to revise maps if sufficient information is not provided for the purposes of cultural resources review. Attach multiple Area of Potential Effect maps, if needed.

Applicants who do not have mapping software to create the Area of Potential Effect map can use the Washington Department of Ecology's free [mapping tool](#), which allows users to draw polygons and create PDF maps. Users can turn on important features such as section, township, range, county, etc.

Important Note: Ground-disturbing activities for any project, regardless of project type, that occur before the completion of the cultural resources review process are not eligible for reimbursement. If the sponsor has a project that will involve ground disturbance (such as geotechnical excavation) be sure to indicate these activities in the grant application and make the RCO grants manager aware of this work before going under agreement. This will help ensure the appropriate review is conducted for the project.

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/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, \$15, 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 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.	<ul style="list-style-type: none"> Review of existing literature, which may include consideration of recent unpublished work. Identifies specific risk of failure associated with a capital project. 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.	<ul style="list-style-type: none"> A timeline and budget for completion has been identified. A rigorous analytical method has been proposed including sampling strategy related to an understanding of the parameters in question. Factors affecting noise/signal ratio and temporal and spatial variation have been addressed. 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.	<ul style="list-style-type: none"> The project type affected is an important component of nearshore process-based restoration 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.	<ul style="list-style-type: none"> Clear analysis of the representativeness of the study site within a population of sites. Strong isolation of factors and co-factors.
5	Learning Priority (5 pts.)	Strong projects address learning objectives defined in this RFP.	NA	<ul style="list-style-type: none"> The proposal addresses the issues described in the learning objectives text.

APPENDIX B: LEARNING OBJECTIVES

The following seven learning objectives reflect our programs 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 2020 learning project review:

D1. Delta System Scale Analysis of Habitat Function and Resilience – 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. There are multiple design decisions that affect project cost, and are based on assumptions about how habitats will evolve following dike removal. We currently lack the ability to predict the importance of surface tillage; drainage ditch modification, excavation of “starter channels”, and the extent of dike removal (see Page 71 in [Clancy et al 2009](#) for a more lengthy discussion of best practices for berm or dike removal or modification). 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 learning project topics will receive additional attention in the 2020 learning project review:

B1. Identification of beach 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 (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, and 4) factors that create risk of failure. A strong effort will 1) leverage best available spatial data, 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. An example of this would be to engage with salmon recovery networks to prioritize bulkhead removal, embayment restoration, and reforestation efforts to maximize restoration and long term resilience of juvenile salmonid rearing services on beaches most important for salmonid rearing.

B2. Development of pilot projects that result in protection of sediment sources using management measures that are more cost effective than parcel by parcel fee-simple acquisition. Current funding pools are inadequate to acquire all shoreline parcels that provide sediment supply services, and sediment supply degradation continues under existing state and federal laws. A mixture of education, acquisition, and regulatory approaches are ultimately necessary to protect existing sediment supply. Without effective protection strategies, restoration will have very limited success in maintaining current beach ecosystems under sea level rise. A strong proposal will 1) evaluate the cost effectiveness of different approaches that provide perpetual protection of sediment supply using capital projects, while 2) minimizing the cost to the public for those protections, and 3) insuring efficient enforcement.

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 2020 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. Prediction of nearshore salmonid rearing services – Redman et al. (2005) provides the last systematic sound- wide evaluation of the potential to improve salmonid rearing by restoring embayments. Existing data and web resources could be used to render available empirical evidence into a model to predict relative salmonid use of Puget Sound sub-estuaries (see E1). This evaluation of relative importance combined with PSNERP change analysis data could be used to identify priority restoration and protection sites in coordination with local salmon recovery teams. A strong proposal would consider 1) the potential relationships between beach system conditions (see B1) both as rearing habitat, and as a factor affecting embayment condition (for example, see page 63 of [nearshore strategies](#)), and 2) our developing knowledge spatial variation in salmonid rearing (see [nearshore salmon planning](#)).

APPENDIX C: OTHER RESOURCES

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	http://www.pugetsoundnearshore.org/technical_reports.html
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
Habitat Work Schedule	http://hws.ekosystem.us/
Ecology Oblique Aerial Photography	https://fortress.wa.gov/ecy/shorephotoviewer/
WA Dept. of Ecology Coastal Atlas	https://fortress.wa.gov/ecy/coastalatlus/tools/Map.aspx

CITATIONS

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