

Puget Sound Partnership and Recovery Implementation Technical Team 2010 Three Year Work Program Review Nooksack Watershed

Introduction

The 2010 Three-Year Work Program Update is the fifth year of implementation since the Recovery Plan was finalized in 2005. The Puget Sound Partnership, as the regional organization for salmon recovery, along with the Recovery Implementation Technical Team (RITT), as the NOAA-appointed regional technical team for salmon recovery, perform an assessment of the development and review of these work programs in order to be as effective as possible in the coming years.

These work programs are intended to provide a road map for implementation of the salmon recovery plans and to help establish a recovery trajectory for the first three years of implementation.

In April 2010, two of the fourteen watershed chapter areas submitted early three-year work program updates on accomplishments, status of actions, and proposed actions that built on the work programs since 2006. The remaining twelve watershed chapter areas submitted their three-year work program updates in May 2010, with one submitting in June 2010.

The feedback below is intended to assist the watershed recovery plan implementation team as it continues to address actions and implementation of their salmon recovery plan. The feedback is also used by the RITT, the Recovery Council Work Group, and the Puget Sound Partnership to inform the continued development and implementation of the regional work program. This includes advancing on issues such as adaptive management, all H integration, and capacity within the watershed teams. The feedback will also stimulate further discussion of recovery objectives to determine what the best investments are for salmon recovery over the next three years.

Guidance for the 2010 work program update reviews

Factors to be considered by the RITT in performing its technical review of the Update included:

- 1) *Consistency question*: Are the suites of actions and top priorities identified in the watershed's three-year work plan/program consistent with the hypotheses and strategies identified in the Recovery Plan (Volume I and II of the Recovery Plan, NOAA supplement)?
- 2) *Pace/Status question*: Is implementation of the salmon recovery plan on-track for achieving the 10-year goal(s)? If not, why and what are the key priorities to move forward?
- 3) *Sequence/Timing question*: Is the sequencing and timing of actions appropriate for the current stage of implementation?
- 4) *Next big challenge question*: Does the three-year work plan/program reflect any new challenges or adaptive management needs that have arisen over the past year?

Watersheds were also provided with the following four questions, answers to which the Recovery Council Work Group and the Partnership ecosystem recovery coordinators assessed in performing their policy review of the three-year work program:

- 1) *Consistency question:* Are the suites of actions and top priorities identified in the watershed's three-year work plan/program consistent with the needs identified in the Recovery Chapter (Volume I and II of the Recovery Plan, NOAA supplement)? Are the suites of actions and top priorities identified in the watershed's three-year work plan/program consistent with the Action Agenda?
- 2) *Pace/Status question:* Is implementation of salmon recovery on-track for achieving the 10-year goals?
- 3) *What is needed question:* What type of support is needed to help support this watershed in achieving its recovery chapter goals? Are there any changes needed in the suites of actions to achieve the watershed's recovery chapter goals?
- 4) *Next big challenge question:* Does the three-year work program reflect any new challenges or adaptive management needs that have arisen over the past year either within the watershed or across the region?

Review

The following review consists of four components: a regional technical review that identifies and discusses technical topics of regional concern; a watershed-specific technical review focusing on the specific above-mentioned technical questions and the work being done in the watershed as reflected by the three year work plan; a regional policy review that identifies and discusses policy topics of regional concern; and a watershed-specific policy review focusing on the specific above-mentioned policy questions and the work being done in the watershed as reflected by the three year work plan. These four components are the complete work plan review.

I. Puget Sound Recovery Implementation Technical Team Review

The RITT reviewed each of the fourteen individual watershed chapter's salmon recovery three-year work program updates in May and June 2010. The RITT evaluated each individual watershed according to the four questions provided above. In the review, the RITT identified a common set of regional review comments for technical feedback that are applicable to all fourteen watersheds, as well as watershed specific feedback using the four questions. The regional review, along with the watershed specific review comments, are included below.

Regional Technical Review: 2010 Three-Year Work Plans – Common Themes

In addressing the review questions at the watershed level, as outlined above, the RITT also noted general comments common to all watersheds within the region. Four of these region-wide themes are listed below.

1. H-Integration

The work plans continue to emphasize habitat restoration projects for understandable reasons. However, salmon recovery also requires habitat protection, and hatchery and harvest management actions. **H-integration** has been considered in a number of watersheds by assessing progress towards plan goals in all of the H's. New projects using EPA funds to specifically address habitat protection for some watersheds came about because an overview of progress in all H's showed that habitat protection had received less attention than the other H's. It is important for all watersheds to assess how the work in each H will affect and be affected by the other H's. For example, do exploitation rate ceilings in harvest management provide sufficient fish to take advantage of newly restored habitat; is progress in restoring one type of habitat negated by the loss of the same kind of habitat due to inadequate protection? These kinds of questions will be an important component of adaptive management. Therefore, it would be advantageous to address them in subsequent 3-year work plans.

A challenge that still has not been met in most watersheds is to coordinate actions in all H's to the same set of hypotheses and strategies that underlie the watershed's recovery plan chapter. For example, it should be clear how a hatchery program set up to supplement production addresses the limiting factors for that watershed in a fashion complimentary to the habitat restoration and protection work in the same watershed. It is important to keep in mind that actions in all H's are aimed at moving the populations towards recovered levels of the same set of VSP parameters. Therefore, it would be advantageous for the managers of all the H's to work with each other towards a common vision of how their actions, in combination, will achieve this recovery.

Six steps of H-integration were suggested at a Shared Strategy workshop in 2006 to help groups begin this process). Some watersheds are working through them in a systematic fashion. We continue to support these steps as useful guidance for assuring that all H's are part of each watershed's recovery plan implementation.

1. Identify the people needed to participate, covering all Hs. Bring them into the process.
2. Gain a common understanding of how the H's influence the salmon system.
3. Agree upon common goals for improving salmon.
4. Select a suite of complimentary actions covering the Hs that address the goals (these should then be placed in the work plans).
5. Document implementation of actions and expected outcomes (in work plans).
6. Monitor, report, and adjust (adaptive management!).

2. Adaptive Management

One of the biggest challenges that the RITT has consistently identified for implementing the Puget Sound Chinook Recovery Plan is the development of realistic, useful, and applicable **adaptive management plans** at the watershed level. The Recovery Plan identified these as the key tool for addressing the scientific uncertainties inherent in the plan, yet developing this tool remains a challenge in 2010. To help identify needs, to provide a consistent template for planning and prioritizing monitoring, to develop a

process for refining short-term objectives and 10-year goals, and to increase the technical capacity of the watersheds to complete these plans, the RITT began working with three watersheds – San Juan Islands, Skagit, and Hood Canal - using the Open Standards conservation planning approach with the intent of expanding the work sequentially to other watersheds. As this work began, however, watersheds that did not want to wait for the RITT asked that it develop a template that they could use to prepare for RITT involvement. The template will be completed by July 1, 2010. The RITT will continue to work with watersheds on developing adaptive management plans using this template under a revised time table. Although RITT support will be available to each watershed, the process of building the adaptive management and monitoring plans will still demand time, commitment, and resources from the watershed leads, planners and implementers of actions associated with the Recovery Plan.

3. Climate Change

Climate change is expected to affect the fundamental aquatic and terrestrial processes that control the quality and quantity of habitats for Pacific salmon. This change is the subject of global and regional research, modeling, and planning. For the RITT, Puget Sound Partnership, watershed groups, and other salmon recovery entities, climate change is likely to become a core issue when considering the types and designs of restoration efforts. Specific watershed-scale planning guidance regarding the effect of climate change on salmon and their habitats will require additional study. However, empirical data clearly demonstrate rising air temperatures in the Pacific Northwest during the 20th century, and regional climate models predict that this trend will continue. Resulting changes can be expected in watershed hydrology (magnitude and timing of peak and base flows), stream and ocean temperatures, ocean currents and coastal circulation, salinity gradients, sea level, and biological diversity. Salmon production is intimately linked with many of these variables.

As ecosystem processes and functions respond to climate change, adaptive strategies will need to be developed to mitigate and compensate in the implementation of salmon recovery efforts. The Puget Sound Chinook Recovery Plan and accompanying NOAA Supplement both indicate that climate change impacts on salmon need to be considered in evaluating recovery. The NOAA Supplement also identifies climate change as one of several “specific technical and policy issues for regional adaptive management and monitoring.” To this end, the RITT will work with watershed groups, Puget Sound Partnership, and other stakeholders to develop of adaptive management plans that address climate change.

The following online references synthesize various agencies' efforts at understanding the potential impacts of climate change on natural resources in Washington State:

- University of Washington Climate Impacts Group. 2009. The Washington climate change impacts assessment: Evaluating Washington's future in a changing climate. <http://ces.washington.edu/cig/res/ia/waccia.shtml>
- University of Washington Climate Impacts Group. 2010. Hydrologic climate change scenarios for the Pacific Northwest Columbia River basin and coastal drainages. <http://www.hydro.washington.edu/2860/>
- Lawler, J.J. and M. Mathias. 2007. Climate change and the future of biodiversity in Washington. Report prepared for the Washington Biodiversity Council. <http://www.biodiversity.wa.gov/documents/WA-Climate-BiodiversityReport.pdf>
- National Wildlife Federation. 2009. Setting the stage: Ideas for safeguarding Washington's fish and wildlife in an era of climate change. http://wdfw.wa.gov/wlm/cwcs/nwf_climatechange09.pdf

For a comprehensive listing of resources regarding climate change impacts, preparation, and adaptation, see the Washington Department of Ecology website: http://www.ecy.wa.gov/climatechange/ipa_resources.htm.

4. Protection of Ecosystem Functions

An important element of recovering salmon in Puget Sound is the protection of existing habitat. Adequate protection of salmon habitat in Puget Sound continues to be an issue in all watersheds and continued degradation is noted throughout the area. While habitat restoration is relatively easy to implement by watersheds, given funding, protection of existing habitat is reliant on local regulations and their enforcement. Many regional policy drivers impact salmon habitat, including the Shoreline Management Act, Growth Management Act, National Marine Fisheries Service's Biological Opinion on the Federal Emergency Management Agency's implementation of the National Flood Insurance Program, and the Army Corps of Engineers' revised levee vegetation management policy. These regulations address many of society's concerns about the environment, but not necessarily salmon recovery first and foremost. Stakeholders in salmon recovery (e.g., the watershed groups, PSP, and RITT) need to develop ways to provide the technical input for integrating, to a greater extent, actions that promote salmon recovery into these local and regional decisions and regulations affecting salmon habitat.

Watershed Specific Technical Review: Nooksack Watershed

In general, salmon recovery in WRIA 1 is moving forward consistent with past three-year work plans and the recovery plan.

1. *Are the suites of actions and top priorities identified in the watershed's three year work plan/program consistent with the hypotheses and strategies identified in the Recovery Plan (Volume I and II of the Recovery Plan, NOAA supplement)?*

Yes, the WRIA 1 (Nooksack) work program is consistent with the hypotheses and strategy for their watershed. The WRIA 1 work program builds on and is organized around the eight major suites of 10-year actions identified in Appendix B of the WRIA 1 Salmonid Recovery Plan and highlighted in the WRIA 1 Watershed Recovery Strategy, which was included for this review. The work program also continues with actions for the South Fork population that the TRT (now the RITT) concluded in early reviews needed more emphasis.

The WRIA 1 work program gives highest priority to actions for early Chinook salmon that were expected to produce quick and significant improvements in the populations. These actions primarily fall into those that protect the populations from immediate extinction - especially building and continuing the captive brood stock program for the nearly extinct South Fork population - and those that address major limiting factors in the freshwater. The work program focuses on habitat restoration in the South, Middle, North forks and nearshore; continuing restoration of fish passage; and integration of salmon recovery planning with other planning or regulatory programs. These are all consistent with known threats or strategies for addressing key limiting factors to the populations.

2. *Is the implementation of the salmon recovery plan on-track for achieving the 10-year goal(s)? If not, why not and what are the key priorities to move forward?*

This is difficult to answer conclusively, but most likely implementation is not on track to achieve 10-year goals. There are several reasons for this. First, WRIA 1's 10-year salmon recovery goals are aggressive, broad in scope, and focused on all the major ecosystem components associated with the factors limiting recovery of salmon. Consequently although actions addressing these factors remain on the three-year work plan, many are in planning stages or have not been implemented at the scale necessary to achieve the goals. Here, as in most other watersheds, a lack of capacity and funding for scientific assessments and projects as well as the challenges of political relationships affect the pace of recovery. Consequently, pace varies. Implementation of a key priority identified after the initial recovery plan was completed – the protection of the South Fork population through a captive brood program – has been successful and is on-track. In contrast, restoring passage to the Middle Fork, which when it was modeled during development of the recovery plan contributed significantly to the 10-year goal, has not been on-track. The completion last year of a feasibility study for modifying the barrier on the Middle Fork to restore fish passage and the analysis and completion of a restoration alternative strategy in 2010 may help improve the pace towards the 10-year goals.

3. *Is the sequencing and timing of actions appropriate for the current stage of implementation?*

The sequencing of the work program appears to be appropriate. The WRIA 1 Salmon Recovery Board and co-managers have implemented actions to protect the South Fork population, which was at serious immediate risk of extinction, by starting a captive brood stock program. This appears to be succeeding in the short-term. As long as funding is available (the program will become more and more expensive as more and more salmon are brought into captivity each year), this buffer will allow planners, biologists, and decision makers to focus on effective habitat restoration activities. Salmon recovery planners are also focusing on key assessments, such as tributary mapping and hydrologic modeling that will them to prioritize and sequence actions more effectively. Because the actions identified in the recovery plan and subsequent work plans are many and comprehensive, these kinds of assessments will help planners choose between the many possible actions.

4. *Does the three-year work plan/program reflect any new challenges or adaptive management needs that have arisen over the past year?*

A major need in this watershed is to complete and implement an adaptive management plan and strategy that directly identifies key uncertainties and how to use existing and new knowledge to make effective decisions to recover salmon. This was identified as an action for 2009 and is again identified for completion in 2010. The 2010 work plan and action descriptions included a suit of habitat and population assessment, monitoring, research, and modeling actions that would best be organized and prioritized under an adaptive management plan and framework. The RITT will work with the watershed lead to determine how and when the RITT can be most helpful in completing this type of effort.

II. Policy Review Comments

The Recovery Council Work Group, an interdisciplinary policy team made up of lead policy staff in federal, state, local agencies, as well as a lead policy staff representative from the Northwest Indian Fisheries Commission, evaluated each of the fourteen watershed work plans. In addressing their review questions, outlined above, the interdisciplinary team noted both general comments common to all watersheds within the region, as well as significant advancements and issues needing advancement that are watershed specific and need special attention. The general and watershed specific comments follow below.

Regional Policy Review: 2010 Three-Year Work Plan – Common Themes

The region wants to call attention to the significant amount of work and effort that each of the watershed groups put into updating the three year work plan narratives and spreadsheets. Each year, the watershed groups build off of the previous year's reviews and information, incorporating this into the update. The watershed groups continue to demonstrate an increasing amount of sophistication in implementing the recovery plan, advancing strategically important projects by doing long-term planning, sequencing work, and ultimately prioritizing where funding is focused.

We look forward to continuing to work with watersheds to identify and facilitate high priority projects to move forward and to refine the process and three year work plans.

Adaptive Management and Monitoring

Advancing monitoring and adaptive management remains a high priority both regionally and at the watershed scale. The majority of watersheds continue to indicate that this is a significant, ‘next big challenge’ in their areas. The NOAA Supplement has identified this gap in the Recovery Plan as a critical weakness. As part of the approval process, NOAA indicated that developing this plan was a requirement.

A coordinated monitoring and adaptive management framework that supports refinement at both the regional and watershed scales is critical to understand the pace and effectiveness of recovery actions. This framework and the resulting programs need to support an integrated approach to recovery implementation tracking, incorporate uncertainties around climate change, and develop or refine recovery plan goals where needed.

The region continues to be committed to supporting watersheds in advancing their efforts to develop and implement a monitoring and adaptive management plan in a way that acknowledges the interaction across habitat, harvest, hatchery, and hydropower management decisions. At the regional scale, several actions have been initiated to advance adaptive management, including:

1. RITT guidance on monitoring and adaptive management
2. RITT/PSP template for monitoring and adaptive management that builds a framework within which each watershed that can connect their monitoring information to other watersheds and the ESU.
3. RITT/PSP coordinated approach to support the development/advancement of monitoring and adaptive management programs in each watershed chapter area.

Significant resources are and will continue to be needed to support involvement in the development of these programs across the Puget Sound and then in the implementation of the programs via focused monitoring funds. Resources need to include having involvement from all sectors of salmon recovery working together: hatchery, harvest, habitat protection, habitat restoration, and hydropower.

Protecting Ecosystem Functions

Preserving options and addressing threats are critical components of recovery implementation both at the local and regional scale. Recovering salmon in Puget Sound requires effective regulatory protection of existing habitat, along with acquisition, incentives, and education and outreach programs around existing land uses. The protection of habitat through these and other approaches remains a high priority.

At this time, there are several opportunities to strengthen the nexus between habitat protection, salmon recovery, and different regulatory mechanisms.

- *Shoreline Master Programs and Critical Area Ordinances*: Local jurisdictions across the Puget Sound are working to update their shoreline master programs, through the Shoreline Management Act, and their critical areas ordinances, through the Growth Management Act. These two regulatory programs are critically important to our

collective ability to protect and manage habitat since they address the management of riverine and marine shorelines, streams, wetlands, water recharge zones, and other ecologically important habitats for salmon. There is a strong need to incorporate existing information from the salmon recovery plan and implementation efforts into these regulatory updates in order to strengthen the relationship between land use management and the needs of salmon. Although the watershed groups are not the empowered entity for leading the effort to incorporate information from the salmon plan into the regulatory update, it is the responsibility of everyone involved to support local jurisdictions in adopting the regulations necessary to preserve recovery options for the future. This includes making information accessible as well as understandable within a regulatory context.

- *FEMA's National Flood Insurance Program (NFIP)*: NOAA recently issued a Biological Opinion on FEMA's NFIP, concluding that the program jeopardizes and adversely modifies designated critical habitat for salmon recovery. Since this decision in 2009, there has been a significant amount of concern and conversation about how to respond. Local jurisdictions, along with FEMA, NOAA, PSP, and others, are working to identify a clear path forward for protecting floodplains in terms of ecosystem recovery and human health and well-being. Implementation of an agreed-upon approach to limit the impacts of development in the floodplain will require additional resources at the local and state level and need to be tracked as part of understanding the status of salmon recovery efforts.
- *Army Corps of Engineers Levee Vegetation Management Policy*: A significant amount of riparian habitat sits on top of levees within the floodplains and deltas of the Puget Sound. The Corps' policy requires the removal of vegetation over two inches in diameter. This new levee vegetation management policy removes significant amounts of vegetation, which provide salmon habitat in already degraded riparian areas. A regional response to this policy is underway and important to continue to support in order to reduce the negative impact for salmon recovery. Numerous entities, including state agencies, local governments, non-profits, tribes, and the Puget Sound Partnership, sent a letter to the Corps urging that this policy be changed to allow for retention of more trees on levees.

Additionally, there are non-regulatory mechanisms that are timely. This includes:

- *Education and Outreach*: Many of the watersheds identified education and outreach programs as an element of their work plans. Working with the public to advance a comprehensive understanding and individual actions associated with recovery is critically important. Advancing programs across the watersheds and that are mutually supportive within the watersheds will help strengthen the effort.
- *Nearshore Technical Assistance*: protection of the nearshore remains a high priority for salmon recovery across the Puget Sound. There are emerging tools and resources available, including technical work from the General Investigation for the Puget Sound nearshore, the monitoring and adaptive management template, and watershed-based prioritization approaches for nearshore. Continuing to advance the thinking around fish utilization and critical nearshore habitats will support a refined approach to protection and balancing different uses along the nearshore.

Focus on salmon recovery

Salmon recovery implementers continue to be pulled in many directions by other mandates. The Puget Sound Partnership and the Policy Work Group recognize that implementation of salmon recovery actions remains a high priority. Maintaining a focus on the priorities in the salmon recovery plan, as described in each watershed chapter plan, will be increasingly challenging, and will require a continued investment of time, resources and support.

Funding

Establishing consistent, reliable funding for capital and non-capital projects to implement the recovery plan chapters continues to be a challenge. It is critically important to fund implementation of the plan, at an adequate level, in order to keep the momentum and focus on recovery. Lack of capacity across member organizations of watershed groups remains a significant limiting factor for advancing recovery objectives. The advancement of H-integration and adaptive management objectives, in particular, call for continued funding to support ongoing coordination and participation.

Balancing Land Uses

The Puget Sound Partnership funded a report, *Obstacles to Implementing Important Capital Project for Salmon Recovery* (Blackmore Consulting, 08/27/09), to identify obstacles for implementing habitat restoration for salmon recovery around the Puget Sound. The report identified the following key obstacles that continue to be a challenge and require significant regional and local resources:

- Balancing working lands, primarily agriculture and working forests, with salmon recovery. This is especially important in the estuaries where both working agriculture and salmon restoration is located.
- Supporting a decision-making approach that incorporates salmon recovery needs, based on the plan, into decisions at the federal, state, and local scale. This is often difficult due to variable politics and community support but ultimately has a significant impact on our collective ability to complete capital projects on pace to achieve recovery goals

Watershed Specific Policy Review: Nooksack Watershed

In general, WRIA 1 (Nooksack Watershed) is leveraging funding opportunities to advance their salmon recovery plan in a way that supports the local organizational structure.

- Nooksack has received a lot of habitat restoration money recently – 2010 supplemental; ESRP & stimulus for smuggler’s slough; PST projects... really need a tracking system
- Team working on salmon recovery remarkable – dedicated, tenacious, built trust. Need continued capacity and the ability to get capacity funding out!

Significant Improvements:

- Work has been underway in all 8 suites of actions within the 10-year goals. The advancement of these suites of actions is critically important and impressive;

- A significant amount of effort and time has been put into integrating salmon recovery information into the updates of the Shoreline Master Program and the Critical Area Ordinance. WRIA 1 is a leader in this effort.
- The addition of the Education/Outreach program category highlights the critical role of the broader community in salmon recovery and the need to advance this element of implementation.
- The WRIA 1 group has demonstrated an increased sophistication and strategic approach in use and timing of funding for restoration projects.
- Tenacious coordination between salmon recovery and flood management is resulting in an innovative structure to advance both needs jointly.

Issues to Advance:

- Whatcom County is one of the first jurisdictions to update their Shoreline Master Program (SMP) and to do so with information and coordination by salmon recovery experts. Maintaining this level of integration/communication will be critical to inform County decisions as it implements the SMP and Critical Area Ordinance (CAO) plans. This may require additional capacity to support this implementation.
- Funding the Education/Outreach program in a way that supports the other elements of implementation of the recovery plan can strengthen its impact. This may include topics such as floodplains and flood hazard management. The local effort of education and outreach can also be potentially linked to the regional effort in order to help contextualize salmon recovery within the ESU.
- Capacity and funding to advance a monitoring and adaptive management program, including an approach to assess progress across the goals, continues to be important to highlight what type or change of resources are needed for recovery.
- Continuing to coordinate and advance the relationship between flood management and salmon recovery will support the long-term recovery.