

**Puget Sound Partnership,
Salmon Recovery Council Work Group,
and Recovery Implementation Technical Team (RITT)**

2012 Three Year Work Plan Review

for the

Skagit Watershed

Puget Sound Partnership and Recovery Implementation Technical Team 2012 Three Year Work Plan Review Skagit Watershed

Introduction

The 2012 Three-Year Work Plan Update is the seventh year of implementation since the Recovery Plan was submitted to NOAA/NMFS in 2005. The Puget Sound Partnership, as the regional organization for salmon recovery, along with the Salmon Recovery Council Work Group and 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 Plan s in order to be as effective as possible in the coming years. These work plan s are intended to provide a road map for implementation of the salmon recovery plans and to help establish a recovery trajectory for three years of implementation.

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 Recovery Council Work Group, the Puget Sound Partnership and the RITT to inform the continued development and implementation of the regional work plan . 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 2012 work plan 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 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 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 plan:

- 1) *Consistency question*: Are the suites of actions and top priorities identified in the watershed's three-year work plan 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 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 plan 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:

1. *a regional technical review that identifies and discusses technical topics of regional concern*
2. *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*
3. *a regional policy review that identifies and discusses policy topics of regional concern*
4. *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 plan updates in May-July 2012. 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 technical review, along with the watershed specific technical review comments, are included below.

Regional Technical Review: 2012 Three-Year Work Plans – Common Themes

Adaptive Management and Monitoring

One of the biggest challenges for implementing the Puget Sound Salmon Recovery Plan is developing and implementing a useful and applicable approach to adaptive management, both at the watershed level and for Puget Sound as a whole. The NOAA supplement to the recovery plan identified this as one critical missing piece of the plan as originally submitted. Since then, several watershed groups have made good progress towards developing adaptive management and monitoring plans. Meanwhile, the RITT has now completed a general framework for developing watershed adaptive management plans, with the goal of retaining the individual characteristics of each one while also providing a uniform way to evaluate each chapter's

progress in order to understand and adapt the progress of salmon recovery across the entire region.

While adaptive management rests on a solid technical basis associated with monitoring data, it will not be possible to implement without strong policy-level leadership, support, and participation. Later this year the RITT will begin working with all watershed groups on the first parts of deploying the framework that establishes the technical basis. We anticipate that this work will use, and not duplicate or repeat, the work that has already been underway in many watersheds to develop monitoring and adaptive management plans and to revise the recovery plans based on new information. We also anticipate that, assuming the necessary policy-level leadership, this work will lead to broader participation by all parties necessary for salmon recovery, such as fishery resource managers, land use regulators, and restoration project proponents. This broad participation will be necessary for the ultimate success of adaptive management, and we hope that all relevant parties will participate in the early technical stages as well as the later ones that will require policy-level commitments.

We also anticipate that the framework for monitoring will provide a place to include information that may currently be collected in isolation by diverse groups (for example, spawner abundance and hatchery versus wild composition surveys, juvenile abundance monitoring, land cover surveys, fish presence surveys, habitat quality and quantity surveys, etc.). In this way, all relevant monitoring information should become part of the knowledge base of all participants in watershed recovery plan implementation and the subsequent adaptive management of implementation.

H integration

The Puget Sound Salmon Recovery Plan states clearly that actions in Habitat, Hatchery, and Harvest management (the “Hs”) must be coordinated towards recovery of Puget Sound Chinook salmon. While actions are taking place in all these areas, the current three-year work plans do not yet reflect the coordination these actions that we have always felt is necessary. Most watershed groups have expressed frustration that all necessary participants are not working with them to effectively integrate the Hs. We agree, and we share this frustration. As we’ve stated numerous times in the past, it is not possible for the RITT to adequately evaluate these three-year work plans unless they include all significant actions in all the Hs.

We continue to urge the Recovery Council, whose members include all of the key parties in salmon recovery, to provide clear policy direction that all H’s must work together for salmon recovery to progress. We believe that both effectiveness and efficiency of management and recovery dollars will be increased if habitat restoration, habitat protection, harvest management, and hatchery management (including hatchery “reform”) are all part of the same salmon recovery plan .

Part of H-integration is assuring that all parties have a common understanding of the status of the salmon resource as well as what actions are needed to move that resource to recovered status. The understanding of what to do is embodied in the watershed recovery chapters. The understanding of the status and trends of the resource is comprised of the population VSP

information, such as time series of spawning escapement, juvenile outmigrant numbers, and recruits per spawner. Some the three-year work plans we reviewed included this information, and we recommend that it be included in all watershed three-year work plans. One benefit we see in this is that the process of gathering basic status and trends information often results in improving the lines of communication between watershed recovery groups and fishery resource managers.

We note that there is some ambiguity as to what kind of information and plans for harvest and hatchery management should be provided for watershed areas where there are no spawning areas for one of the 22 Puget Sound Chinook populations. In general, harvest management actions should be included in three-year work plans for those populations that spawn within a watershed. Therefore, there would be no harvest management discussion for watersheds with no spawning populations. Likewise, discussions of hatchery management actions will generally be included for plans that release fish or take eggs within a watershed. We do note, however, that all watersheds have some hatchery production, including releases into freshwater and/or netpen rearing. Hatchery fish are present in most suitable accessible freshwater and marine habitats in all watersheds and the hatchery actions for these plans should be discussed in the watershed where juvenile fish are released. Therefore, actions to assess the presence and impacts of hatchery fish should be considered and discussed in the watershed where the assessment and impacts are occurring. This means that all watershed plans potentially should be considering actions directed at hatchery fish as part of their discussion and three-year work plans.

Emerging Topics

Importance of nearshore marine and migration corridors to all PS Chinook populations

There is yet to be a consolidation of the local salmon recovery plans in a manner which extends protection and restoration to all populations which transit through nearshore marine and migratory corridor areas. The RITT considers this an emerging topic of concern on a region-wide basis.

Scientists have historically realized the importance of migration corridors to anadromous species during those life history stages when the species moves from one habitat to another. For Chinook salmon, such pathways exist in nearshore marine environments within Puget Sound, as well as in the San Juan Islands, and Georgia and Juan de Fuca straits. These pathways are known to be utilized/ followed by multiple (mixed) populations from natal basins into and through nearshore marine areas. These areas include critical habitats for juvenile feeding and rearing, where first summer growth is an important aspect of survival to adult, and also to returning adults. Recent research confirms the importance of these corridors (Fresh and Beamer 2012 draft¹; Morley et al 2012², Toft et al 2007³). In particular, researchers are beginning to document the specific changes and impacts that occur as a result of shoreline armoring and modifications (such as overwater structures), to the ecological structure and foodwebs at these sites.

Each watershed has some portion of nearshore marine habitat to contend with in their Salmon Recovery Plans, but they are managed in considerably different manners dependent on local

circumstances and resources. The local watersheds are not particularly knowledgeable regarding distant populations that may rear in their nearshore areas, nor the significance of protection of their nearshore habitats areas to fish populations that are non-natal. New genetic analyses have given us the ability to distinguish genetic makeup of populations in these zones of mixing. Prior insight about population aggregations in non-natal areas was limited to recovery of coded-wire tags from hatchery populations; this gave us a somewhat limited perspective and required that we consider hatchery fish migrate identically to wild populations. In some cases, the genetic analyses shed new light on transboundary population migrations as well.

Watersheds not on pace: slowing recovery, loss of option

Implementation of the plans continues to not be on pace with the needs of recovery. This slower pace of implementation will have a compounding impact on the ability to recover. Understanding the status of recovery in terms of what changes to the strategies and actions in the plans will be critical in reducing the level of uncertainty associated with recovery.

Formal update of the Recovery Plans

The RITT has completed six years of work-plan reviews based partly on a series of key questions and also with comparison to recovery plan chapters submitted by watershed that posit hypotheses about watershed functions and responses to treatment. Since implementation began in 2005 many of the watersheds have matured in their approaches and are pursuing directions and actions that are not consistent with their original plans and hypotheses. In many ways this is adaptive management in action. However, the RITT is increasingly less reliant on individual chapters and hypotheses therein and is turning to the history of workplan reviews and information gathered from PSP staff and direct, but infrequent, liaison with watershed groups and lead entities. Recovery plans are not regulatory decisions by NOAA but satisfy their obligation under the ESA §4(f) to identify conservation and survival actions for listed species. The RITT recognizes that the process of public comment on the 2005 draft PS Chinook Plan (Plan) and response (2007 Supplement) was lengthy and complex. We also observe that some chapters in the Plan likely do not require updates. However, many chapters should be updated and NOAA should consider provision of formal guidance for these updates. It may be possible, and preferable, that chapter updates can be handled as an informal process but it may also require a public comment process. Regardless, the current plan does not represent the activities and actions that were originally proposed for certain watersheds and does not allow the RITT to uniformly consider hypotheses in evaluations of Plan implementation.

Protection of Ecosystem Functions and Habitat

Protection of existing well-functioning intact habitat is an essential component of salmon recovery in Puget Sound. 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. Several of the watersheds have documented the continued degradation and loss of forest cover and riparian buffers within the Urban Growth Boundary. These concerns have been documented by habitat change analyses that were completed in central Puget Sound (see as an example: Vanderhoof, J. (2011) WRIA 8

Technical Memorandum 2011-01 - Lake Washington/Cedar/Sammamish Watershed (WRIA8) Land Cover Change Analysis. King County Water and Land Resources Division, Department of Natural Resources, 84 pp.). One of the original premises of the Puget Sound Chinook Recovery plan approved by NOAA was that there would not be a continued degradation of habitat but that habitat conditions throughout Puget Sound would improve with the implementation of the Recovery Plans. Some watersheds have noted that the current rate of habitat loss may be offsetting any gains they are making through restoration projects.

The restoration of habitat can be implemented by a variety of funding sources available to the watershed groups. However, many local, state, and federal regulatory policies also impact salmon habitat, for example, the Shoreline Management Act (SMA), Growth Management Act (GMA), state Hydraulic Permit Approvals (HPA), NOAA's reviews of federal actions under Section 7 of the ESA, and the Army Corps of Engineers' revised levee vegetation management policy. These current regulations must be effective in the protection and maintenance of the current biological integrity of these areas or the implementation of projects may not be sufficient to recover Puget Sound Chinook.

The RITT and the Puget Sound Recovery Council has been briefed on the SMA, GMA, and HPA plan as well as other regulatory plans in order to better understand how practical implementation of habitat protection could be better incorporated into salmon recovery. While these plans all include some consideration of environmental protection needs, they also require regulators to balance a number of other societal benefits, such as economic development and access to the shoreline and navigable waters. Alone none of these acts are sufficiently integrated with the Puget Sound Salmon Recovery Plan for us to be able to provide specific guidance regarding how habitat protection should be implemented to support salmon recovery. Therefore, while some of our watershed-specific comments suggest ways that individual watershed groups could better integrate habitat protection into their recovery plan implementation, we also recognize that much of the solution to this problem lies in revising the underlying planning processes. We suggest that the Recovery Council, the watershed groups, and the RITT should work together 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.

Climate Change and Ocean Acidification

Climate change and ocean acidification is expected to affect the environmental and ecological processes that, in turn, control the quality and quantity of habitats for Pacific salmon. This cascade of changes is the subject of global and regional research, modeling, and planning efforts. For the Recovery Council, RITT, Puget Sound Partnership, watershed groups, and other salmon recovery entities, climate change is likely to become an increasingly important issue when considering restoration actions. Specific watershed-scale planning regarding the effects of climate change and ocean acidification on salmon and their habitats will require additional study. However, current empirical data clearly demonstrate increased air temperatures in the Pacific Northwest during the 20th century, and regional climate models predict that this trend will continue. Increasing air temperatures will result in changes to watershed hydrology such as the magnitude and timing of peak and base flows. In addition to changes in watershed hydrology, it is anticipated that climate change will result in changes to ocean acidity, salinity, biodiversity,

temperature, currents and coastal circulation, as well as sea level. Salmon production is intimately linked with these variables.

As ecosystem processes and functions respond to climate change and ocean acidification, salmon recovery strategies will need to adapt to these changing environmental conditions. The Puget Sound Salmon Recovery Plan and accompanying NOAA Supplement both indicate that climate change impacts and the associated ocean acidification on salmon need to be considered in evaluating recovery. The NOAA Supplement identifies climate change as one of several “specific technical and policy issues for regional adaptive management and monitoring.” The RITT will work with the Puget Sound Partnership, and other stakeholders to incorporate considerations of climate change and ocean acidification into the adaptive management plans.

For a comprehensive listing of resources regarding climate change impacts, preparation, and adaptation, see the Washington Department of Ecology and Fish and Wildlife websites:

http://www.ecy.wa.gov/climatechange/ipa_resources.htm

http://wdfw.wa.gov/conservation/climate_change/

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Watershed Specific Technical Review: Skagit Watershed

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)?

The actions identified in the Three-Year Work Plan are consistent with the hypotheses and strategies offered in the watershed recovery chapter, with an emphasis on habitat restoration and protection through acquisition of estuarine and freshwater rearing habitat in large river floodplains. The work plan also contains actions in upper watershed areas addressing sediment concerns consistent with the watershed recovery chapter. Needed assessment and research actions are also listed.

The recovery plan chapter also includes important hypotheses about how these habitat restoration and acquisition efforts will interact with management of harvest and hatcheries, and protection of existing functioning habitat through means other than acquisition, to work together to move the six Chinook populations in the system towards their recovery goals. The Three-Year Work Plan does not include actions for harvest and hatchery management, and protection of existing functioning habitat through means other than acquisition. Therefore, it is impossible to fully evaluate the consistency of the actions in Three-Year Work Plan with the overall recovery plan without understanding what actions are ongoing or planned in the areas of harvest and hatchery management and habitat protection.

As one means of addressing this lack of all the Hs in the workplan, the lead entity has continued to work with the RITT as we fit the Skagit plan into the all-H framework we are developing for monitoring and adaptive management (M&AM). The Three-Year Work Plan correctly reports that the RITT has been behind schedule on this work, although we have now completed initial tailoring of the Skagit plan. As part of this effort, the lead entity and managers responsible for harvest and hatchery management, and we hope habitat protection management as well, will be convened together to develop a basin-wide monitoring plan. We agree with statements in the Three-Year Work Plan that this process will help move H-integration forward in the Skagit basin.

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?

The Skagit recovery plan includes targets for complete recovery of Skagit Chinook salmon stocks but does not have specific 10-year goals. The Three-Year Work Plan reports: 1) that tidal delta restoration is approximately on pace to achieve restoration goals, assuming linear progress towards a completion date 50 years from the date the plan was adopted, and 2) generally, restoration projects have proven to be more complex than first thought, and thus harder to implement and often more costly. Because remaining identified delta restoration projects involve privately owned agricultural land, the watershed group feels that the pace of restoration in this area may be slowed in the future compared with the recent rate. This is an important observation and the pace of delta restoration in the Skagit watershed should be closely monitored in upcoming years to track whether this restoration is or is not on pace towards full recovery.

The three-year work plan cites a report that documents a response of juvenile Chinook salmon to the restoration that has occurred in the Skagit estuary.

The Three-Year Work Plan also reports that nearly one half of restoration funds have gone towards acquisition of functioning floodplain habitat. Although this is not quantified in terms of progress towards recovery, the early focus on protection of floodplain habitat, is consistent with the recovery plan's priorities. However, overall progress in achieving the ultimate goal for floodplain habitat can only be evaluated by comparing gains from protection and restoration with potential losses from human land uses or other disturbances. This would require a basin-wide assessment of habitat trends, which the Three-Year Work Plan says is not currently available. The three-year work plan reports that a review of potential restoration projects in the middle Skagit in 2011 should help bring more restoration projects in this area on line.

There was no information to evaluate the pace of actions related to harvest, hatchery, and habitat protection through regulatory means provided in the Three-Year Work Plan.

The net effect of actions in all the Hs determines the trends in abundance, productivity, spatial distribution, and diversity of the six Chinook populations in the basin. Some information pertaining to this, such as spawning escapement estimates and juvenile outmigration numbers, was reported in this year's three-year work plan. The information was obtained from the fishery resource managers, although those agencies did not participate in compiling the information for this plan update. We urge all the groups and authorities working on the recovery of Skagit Chinook salmon to cooperate in the reporting of resource status information as well as including information on the progress of recovery actions in all the Hs.

The stock status information reveals several things that could inform overall implementation of the recovery plan. First the juvenile outmigrant information shows a slight upward trend that may reflect a positive response to restoration actions that have already occurred. However, the trend is slight and not necessarily statistically significant. The status information also shows a continuing concentration of Chinook spawners in the upper Skagit summer run. This flags a concern for loss of spatial distribution and among-population diversity. We recommend that the watershed group consider how this information might influence the implementation and adaptation of the watershed strategy in the future. Completion and implementation of the monitoring and adaptive management plan for the watershed should help create a context within which this information can be applied to any needed plan modifications.

Finally we note that this year's three-year work plan includes a good deal of information on the implementation of monitoring actions identified in the Skagit recovery plan, including implementation of the Intensively Monitored Watershed plan as described in Appendix E of the Skagit recovery plan. There is also a list of a number of important natal and pocket estuary and floodplain restoration projects. This monitoring will be critical to the ongoing implementation of the Skagit recovery plan, and we applaud all the work that is being done in this area. There is also a summary of the research projects that are being carried out pursuant to the plan, including some new research actions not originally contemplated when the plan was written. These will be important to inform future implementation of the plan, especially as the adaptive management plan is completed using the RITT framework.

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

Sequencing and timing of actions related to habitat restoration (concept, feasibility, design, construction) and habitat protection through acquisition are appropriate. The long term juvenile Skagit Chinook monitoring (i.e., Skagit IMW) has been underway since 2005. This monitoring effort is designed to detect a juvenile Chinook population response to habitat changes (restoration) in the tidal delta and to a lesser degree the freshwater and nearshore rearing life stages. This work plan also reports improved effectiveness monitoring of individual projects, either underway or planned.

Work has progressed on the development of a conceptual model and results chains for the Skagit plan using the RITT's framework for monitoring and adaptive management. We are unable to evaluate the sequencing and timing of actions related to harvest, hatcheries, or habitat protection through regulatory means from the information provided in this Three-Year Work Plan.

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

The Three-Year Work Plan references several challenges (some with new opportunities) that are currently inhibiting salmon recovery efforts within the Skagit including:

- Lack of support for (certain actions in) the plan; and
- No recognized forum with authority (and commitment or capacity) to address coordination of all the Hs in the Skagit watershed.

These are not new challenges, but important ones whose resolution will be the joint efforts of Recovery Council and others.

The three-year workplan includes a table of priority tiers for restoration target areas based on the Skagit Watershed Council's updated Strategic Approach. This focuses near term restoration priorities on areas of the watershed used by all six Skagit Chinook populations.

The watershed group completed a Habitat Protection and restoration Master Plan for the middle Skagit River that has resulted in new restoration projects being submitted for funding this year. This approach should help resolve a previously-identified impediment to implementing recovery actions in this important area.

II. Policy Review Comments

The Recovery Council Work Group is an interdisciplinary policy team including members from each of the Council's caucus groups (tribal, federal, state, watershed, environmental, and agriculture/business). The team developed both general comments on common themes across the region's watersheds, as well as significant improvements and issues needing advancement that are watershed specific. General and watershed specific policy comments follow below.

Regional Policy Review: 2012 Three-Year Work Plan – Common Themes

It has been thirteen years since the listing of Puget Sound Chinook. Although considerable advances are underway towards recovery, significant challenges remain. The following highlights some of these key challenges.

The region wants to again recognize the significant amount of thought, time, and energy that each of the watershed groups put into updating their specific three-year work plans – they continue to be more sophisticated and are critical to the work of implementing recovery. The region continues to look for ways to improve the structure of the work plans to support stronger consistency across the watershed groups and help them be more useful for the multiple purposes they fulfill.

The region is continuing efforts to advance a coordinated implementation of the recovery plans at the watershed and regional scales and recognizes the need for support within all watersheds to do this work. The finalization of a common framework for monitoring and adaptive management forms the structure for future improvements and adaptation of the Salmon Recovery Plan. In October 2012, the Puget Sound Salmon Recovery Council plans to hold a forum to discuss progress of the overall salmon recovery program. By hearing directly from each watershed on their specific issues and challenges, the Recovery Council hopes to enhance support for and coordination of recovery efforts across the region.

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 in the context of the broader Sound-wide recovery efforts. Maintaining a focus on the priorities in the salmon recovery plan, as described in each watershed chapter, will be increasingly challenging as salmon recovery efforts compete in funding and time with other environmental and social programs, and will require a continued investment of time, resources and support. Work to develop, and then implement, the monitoring and adaptive management plans in each of the fourteen watershed chapter areas is one critical priority for the next few years. Other critical priorities that require a focus on salmon recovery are the items described below: multi-level relationships and discussions, monitoring and adaptive management, capacity support, habitat protection, and consistent funding.

Continue to Support Multi-Level Relationships and Discussions

Decisions that affect salmon recovery are made at the federal, state, and regional scales and are often in need of reconciliation at the watershed level. The region remains committed to supporting difficult conversations that are relevant to salmon recovery in order to find common ground and common solutions. These types of decisions include issues around land use such as the agricultural buffers and critical areas ordinances, the management decisions around harvest, hatchery, habitat protection, and habitat restoration and the need to integrate these decisions, as well as the scale of review of information on the status of recovery efforts across the Puget Sound such as in the Action Agenda and with the population allocation across the region.

Monitoring and Adaptive Management

The region recognizes the Skagit, San Juan, and Hood Canal watershed groups for their assistance in the development of a common framework for monitoring and adaptive management by being willing to use their recovery plans to advance the framework. The use of the common framework to develop monitoring and adaptive management plans in each of the fourteen watershed chapter areas will improve our collective ability to better understand, track, adapt, and respond to new information around the implementation of the recovery plan. The work to develop these monitoring and adaptive management plans, as well as to implement them, has taken longer than anticipated and will require a substantial additional investment of time and effort starting now from scientists and policy makers around the region. Success in this effort will depend on participation from all resource managers and decision makers in each of the watershed chapter areas related to salmon recovery and an integration of the management across harvest, hatchery, habitat protection, and habitat restoration. This includes the co-managers on harvest and hatchery issues, tribes, local governments, state and federal agencies, business and agricultural interests on habitat restoration and habitat protection issues, as well as the relevant non-profit implementers. It will be important for the region, alongside the watershed chapter areas, to enhance the participation of these entities in order to create viable structures that can hold the results of the monitoring and adaptive management effort. The region recognizes the capacity limitations and is committed to supporting this effort to build collaborations.

In addition to the critically needed structure discussed above, the region also recognizes the importance of finding funds to implement the monitoring information identified through the development of the plans. As a region, we already know that we will need to fund watershed-scale habitat status and trends monitoring on a consistent basis across the whole basin. Additional needs will be highlighted as the plans are completed.

Capacity for Implementation of the Recovery Plan

Salmon recovery must remain a priority and focus of the Puget Sound region and efforts around Puget Sound recovery. The salmon recovery community, and lead entities in particular, report increases in responsibilities and decreases in overall capacity to meet these responsibilities. Lead entity programs have been successful at leveraging in-kind support from citizens and from technical experts but more support is needed. While the level of funding and political support for salmon recovery varies widely by watershed, increased financial and political support is needed across all watersheds.

Lead entities represent one piece of the overall human infrastructure required for successful implementation of the Salmon Recovery Plan. Capacity and focus of work towards salmon recovery at the local, regional, state and federal levels, as well as other supporting groups (project sponsors, private resource managers, etc.), will have a significant impact on the ability to implement the Plan and the success of recovery efforts region-wide. The region recognizes the critical importance of building support at multiple levels in order to provide assurance that the actions associated with salmon recovery will be implemented and sustainable over time despite shifts in political will and funding.

Protecting Ecosystem Functions

Protecting habitat is recognized in the region as one of the most important near-term steps to protecting the health of Puget Sound. Despite some of the most protective laws in the nation, the assumption in the Salmon Recovery Plan that habitat will not be lost is clearly wrong. This is supported by the Implementation Status prepared by M. Judge for NMFS/NOAA (2011) and the Puget Sound Tribes Treaties Rights at Risk Paper (2011). Watershed groups will need to support the alignment and strengthening of regulations and policies directing land use, development, and water use in order to stop the continued loss of habitat. The Puget Sound Action Agenda strategic initiatives include a particular emphasis on habitat and should be oriented towards the needs around salmon recovery.

With numerous assessments and strategic conversations happening within the salmon recovery watershed entities, salmon recovery programs are often key contributors of technical information to land use policy processes such as Shoreline Master Program updates, floodplain management discussions, and Critical Areas Ordinances. In particular, watershed groups continue to be a clearinghouse of information and a center point of expertise on watershed ecosystem functions. Watershed groups, and in particular Lead Entities, engage to varying degrees in the land use policy decision-making process based on a variety of factors. The land use plans, policies, and regulations need to be implemented in a way that supports salmon recovery rather than undermines the effort. Incorporating salmon recovery is one element but it is more important to ensure consistency with salmon recovery needs. The opportunity to do this is now since decisions are being made on local shoreline master programs and in response to the FEMA BiOp which will set the stage for the next many years on what, where, and how habitat is protected. These opportunities need to be leveraged or will be lost.

At the same time, multiple interests must be balanced: boater safety in rivers, the continued use of productive agricultural lands, balance between wilderness and restoration areas, use of tidelands for shellfish production, protection of the public from flood waters, the need to accommodate growth, and the willingness of landowners to allow restoration activities on private property are all considerations that the watershed groups must face when implementing the Salmon Recovery Plan. Recent efforts such as the Snohomish Sustainable Lands Strategy and the King County Flood District's use of funds to support the local Conservation District and central Puget Sound watersheds' salmon projects and staff are examples of how these interests are being balanced towards salmon recovery.

Consistent, Stable Funding

Consistent, stable, funding sources for capital and programmatic actions related to salmon recovery continues to be absent. This lack of sufficient funding is compounded by the increase in complexity in actions needed to recover salmon. According to a report prepared for the Governor's Salmon Recovery Office (GSRO) by Evergreen Funding Consultants, habitat-related capital needs in Puget Sound total \$1.467 billion and non-capital programs needs are estimated at \$242 million (Canty, 2011). The Puget Sound region remains significantly below this amount.

Funding for salmon recovery comes from a variety of sources, although local, state (including Puget Sound Acquisition and Restoration funds), and federal funding represent a majority of

funding in Puget Sound. Funding is needed not only for capital actions but also for the critical work of education and outreach, land use management, hatchery and harvest, and monitoring of implementation efforts.

Certain emerging funding strategies show promise to help diversity sources, from mitigation programs to cooperative agreements. Examples include the Hood Canal In-Lieu Fee Program and the Watershed Investment District championed by some of the more urban watersheds.

Watershed Specific Policy Review: Skagit Watershed

As part of this overall review, the Policy Review Group would like to recognize and celebrate Shirley Solomon's work as a leader in salmon recovery in the Skagit.

Significant Improvements:

- In the sixth year of developing a work plan update, the Skagit Watershed Council continues to evolve its approach and work in a way that successfully advances restoration actions within the Skagit watershed in a strategic, well organized and thoughtful way.
- The Skagit Three-Year Work Plan continues to be an effective communication tool on the priorities and activities associated with restoration. This includes focus on the estuary and floodplain, description of work within the Middle Skagit, a Gnant chart that describes the status of each project, identification of what this work plan is and what it is not; and structure for the work being advanced in the Skagit. This year's work plan update also included information on salmon population monitoring to help further develop the context of the Skagit watershed.
- As one of three of the pilot watersheds for the RITT's adaptive management framework, the Skagit watershed is playing a significant role in advancing monitoring and adaptive management. Other indications of this include: 10 of 12 monitoring programs in the Recovery Plan are being implemented; the watershed is finalizing templates for estimating juvenile habitat capacity benefits for projects sponsors to use in tracking progress on recovery goals; and fish sampling at restoration sites was expanded this year.

Issues Needing Advancement:

- Continue to lack a coordinated effort across all the elements of the Recovery Plan required to implement salmon recovery in the Skagit watershed. A coordinated effort is needed to advance issues such as habitat protection, water quantity, water quality, and a comprehensive adaptive management and monitoring program. This comment has been made for the last several years and remains a priority to advance. This is revealed through the relatively incomplete three-year work plan contents and the description of the challenges associated with implementation within the three-year work plan.
- The ability of the watershed to keep pace with its recovery goals is questionable given that the bulk of the remanding delta restoration projects require privately owned farmland and there is not a fully vetted process for effectively engaging agricultural landowners on project implementation issues.
- Lack of a coordinated status and trends monitoring program makes it difficult to track the status of available habitat, which is a major focus of the Skagit recovery strategy.

- The upcoming change in leadership at the Skagit Watershed Council presents a substantial challenge to near-term recovery efforts. This upcoming change is being addressed in a deliberate and sophisticated manner but will need support from entities across the watershed.
- Skagit County and several jurisdictions within the County are currently updating their SMPs and the level of protection these plans afford to salmon habitats will be a critical determinant of the ability of the watershed to meet recovery goals. Additionally, Skagit County recently decided to enroll in the Voluntary Stewardship Program associated with critical areas in agricultural areas the critical areas ordinance. This program is not yet funded. Incorporating salmon recovery information into these processes will be critical for advancing salmon recovery and related habitat protection. This need should be factored into the funding scenario for the Skagit watershed.
- Education and Outreach around salmon recovery will be important to continue to engage broader group both locally and regionally.