

**Shared Strategy for Puget Sound
Comments on April 2007 Three-Year Work Program Update
Green/Duwamish and Central Puget Sound Watershed
(WRIA 9)**

Introduction

In April 2007, watersheds submitted three-year work program updates on accomplishments and proposed actions that built on the 2006 three-year work program they developed to get on a recovery trajectory in the first three years of implementation.

This feedback 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 being used by the TRT and Recovery Council Work Group to inform the continued development and implementation of the regional work program components such as adaptive management. The feedback will also stimulate further discussion on recovery objectives to determine what the best investments are for salmon recovery over the next three years.

Guidance for the 2007 work program updates

Guidance for the preparation of the 3-year work program update emphasized the importance of stating what has changed in the Update of the 3-year work program from the prior adopted Work Program. Watersheds were asked to:

- Describe why you have made the changes proposed, including rationale for including, omitting, or changing the rank of a project;
- Describe any adjustments related to considering sequencing, timing, or H-Integration issues; and
- Discuss the status of implementation of your three-year work program – what have you accomplished in terms of the priority actions, what have you struggled with and how have you resolved it, and provide suggestions, if the issues were not resolved, on how we might work together to improve the situation in the future.

The guidance for preparation of the work program update provided the following as factors to be considered by the Puget Sound Technical Recovery Team in performing its technical review of the Update.

- a. Is the Update consistent with the hypotheses and strategy for the watershed's work program?
- b. Is the sequencing and timing of the actions in your updated 3-year work program appropriate for this first full year of implementation of the Puget Sound Salmon Recovery Plan?

- c. Are there significant components missing from the work program? If so, what are these and what can be done about them in the 3-year work program update or at a regional scale?

Watersheds were provided with the following 7 questions that the Recovery Council Work Group would address in performing its policy review of the Three-Year Work Program.

1. Is the work program consistent with the policy feedback and recommendations from the 2004 documents, Puget Sound Salmon Recovery Plan (See Volume I, Watershed Profiles – Results section), and the NMFS supplement to the Puget Sound Salmon Recovery Plan, as well as the regional nearshore chapter guidance, where applicable?
2. Is the work program tied to the identified three-year objectives and scheduled to proceed at a pace sufficient to achieve the watershed's ten-year goals?
3. Is the work program narrative tightly linked to individual projects and priorities?
4. To what extent do programmatic actions address protection identified in the work program and non-capital project list?
5. To what extent are habitat, harvest and habitat actions integrated and included in the work program?
6. To what extent does the work program address the watershed's capacity to implement the updated three year work program?

Guidance noted that the Work Group would also examine the objectives of the three-year work program and how well the program addresses them. This includes considering whether the Work Program Update:

- Improves the level and certainty of protection for habitat and the 22 existing Chinook populations;
- Preserves options for achieving the future role of this population in the ESU;
- Ensures that protection and restoration preserves and restores ecosystem processes for Chinook, and
- Advances the coordinated/integrated management of harvest, hatchery and habitat.

I. Puget Sound Technical Recovery Team Review

The TRT reviewed fourteen individual watershed salmon recovery 3-year work program updates in April and early May 2007. Three questions were addressed. The questions and the TRT's review comments are below.

The revised 3-year work program for the Green Duwamish Watershed reflects, in our estimation, a refined and more appropriately focused set of activities for the next three years of implementation. The work program, while still ambitious, appears to have prioritized the three year list so that many projects and activities that were somewhat incidental to the primary hypotheses and not entirely consistent with the short-term strategy have been de-emphasized. This winnowing has two immediate effects: The TRT's confidence in the

plan's ability to address the primary hypotheses is increased, and the early phases of the adaptive management program can be defined with more clarity.

It is noteworthy that monitoring and adaptive management are included in the later year "scope" columns; the refinement of the current framework into an applied, working adaptive management plan is critical to increasing the certainty of effect in this plan.

TRT Questions

1. Is their work program consistent with the hypotheses and strategy for their watershed?

Yes. The 3-year work program has been closely developed to address two main hypotheses of the recovery plan and is organized according to the strategic priorities outlined in Recovery Plan Policy MS-1 which suggests that the recovery of transition habitats in the Duwamish estuary is of primary concern, followed closely by improvements in lower river, estuary, and marine nearshore rearing habitats. The 3-year work program focuses on improving habitats in the Duwamish Estuary Subwatershed, especially in the transition zone where reduced habitat capacity appears to severely constrain out-migrant survival. These projects are accompanied by a series of acquisition projects in the marine nearshore of Vashon/Maury Island to protect marine rearing habitats that are considered critical to survival for the Green-Duwamish population and probably other populations as well. The acquisition of functional nearshore habitats follows a principle established in the conservation literature (and promoted by the Shared Strategy) that suggests that the protection of functional habitat units should be a primary objective of any conservation plan. Such habitats can become focal points for further recovery activity and can form the core of a reserve strategy much like protected areas in terrestrial landscapes.

2. Is the sequencing and timing of their work program appropriate for this 3-year implementation phase?

In a general sense, yes. By that, the PSTRT means that the "cross sub-basin" sequence of Duwamish Estuary transition habitat work, in concert with or closely followed by Lower river rearing habitat work, prior to investing in middle river work, is more closely aligned with the hypotheses and strategies of the Recovery Plan than any other sequence of these three objectives. Within each of the sub-basins, however, activity sequencing appears to be more opportunistic than strategic. Given the overall condition of the lower river sub-watersheds, this may not be problematic at this stage of implementation. As these early projects are implemented, however, and begin to function as predicted, the location, sequence, and timing of subsequent actions will take on added significance. For example, successful work in the lower and middle river to increase survival and out-migrant productivity will depend greatly on successfully increasing capacity in the transition zone as a first step. The same may generally be said of the nearshore acquisition projects. Overall, the sequencing of nearshore acquisitions early in the recovery plan, and at the same time as estuary projects, is appropriate given the development pressure on nearshore areas throughout the WRIA and the Sound.

Timing of projects has not been considered in the work program. Once again, the condition of lower river habitats may make this aspect of project implementation less critical in the 2008-2010 work program. However, as the population begins to respond to recovery activities, the timing of restoration projects will become increasingly important. Well-timed actions that are based on a reading of population (VSP) response can create synergies that raise system performance in a non-linear manner. Conversely, poorly timed (or poorly placed) actions can have a neutral or even a negative effect on population and ecosystem response and may even require remedial actions to correct unanticipated outcomes.

One further issue has arisen in this and other watersheds throughout the ESU that is important to consider. Other programs and projects not derived from the recovery plan—such as flood management plans, shoreline management updates and critical areas regulation updates, even other restoration initiatives—are occurring at the same time as the recovery plan work. How is the Green-Duwamish evaluating and integrating these activities into the recovery plan and into the updates?

3. Are there significant components missing from the work plan? If so, what are they? What can be done about them in the 3-year work plan?

Some components noted as missing from the 2006 work program review still seem to be missing from this update: hatchery and harvest activities, and flow issues have not yet been addressed. Nevertheless, important progress has been made on H-integration with the formation of the Implementation Technical Committee (ITC). However, integration is not yet as well defined as it must be for the actions anticipated in the recovery plan and in the 3-year work program to have a high certainty of effectiveness for recovery. In our view, effective integration will require a clear goal and objective for the status of the Green River population. In the 2006 review, the PSTRT suggested that the Tribe, State, and watershed work to achieve a consensus goal for the conservation of the Chinook population in the Green River. We repeat that suggestion in this review: Is the population to be an “integrated” one, or is the goal to achieve some relatively independent naturally-spawning (sub) population?

As the plan moves into implementation, the need for an explicit adaptive management plan (AEM) becomes critical. The PSTRT suggests that the development of an initial adaptive management plan become a primary task of the newly formed ITC. While a fully formed 10-year AEM plan is probably unnecessary at this stage of implementation, the development and implementation of some critical aspects of adaptive management during these very early stages of recovery would increase our confidence in the work program’s applicability to the 10-year plan. It would be useful to examine the approach discussed in Schueller et al. for some guidance in the development of the initial objectives and indicators that should inform any monitoring and evaluation. (See the following website: <http://www.snre.umich.edu/ecomgt/evaluation/tools.htm>). Refining the current framework by developing specific habitat and VSP predictions and objectives, establishing criteria, indicators, and metrics for achieving these objectives, would allow early action-specific information to be used in a longer term assessment of ecosystem function and population response. Confidence in the effectiveness of actions would increase if this is

accomplished before too much work is done and the evaluation complicated by lack of an adequate analytical context. Such a plan could also inform the sequence and timing of the many activities called for in the recovery plan.

We assume that monitoring and evaluation (M & E) plans accompany the various projects proposed in the 2008-2010 work program; M & E plans that feed into a larger adaptive management framework are necessary to increase the certainty of recovery, even at this early stage of the plan. Based on the hypotheses, predictions could be made about the outcome of each project and for the cumulative effect of the implemented action *group* on the VSP parameters of interest in the WRIA 9.

Shared Strategy Objectives

1. Improve the level and certainty of protection for habitat and the 22 existing populations.

The level and certainty of habitat protection will increase as a result of successful work program implementation. In this work program, habitat protection is a clear priority in the nearshore environment of Vashon/Maury Island. This early nearshore focus for habitat protection is appropriate given the hypotheses and strategy outlined in the recovery plan to protect functional habitats in the nearshore environment. The nearshore habitat protection objectives should help support other local ESU populations as well.

Conversely, in a system so altered as the lower Duwamish, the pathway to habitat protection generally follows the work of successful restoration. Little fully functional habitat remains in the lower river so little opportunity exists for outright habitat protection. Nevertheless, the action of restoration generally requires purchase of property or easements that carry some level of protection for the restored habitat.

2. Preserve options for achieving the future role of this population in the ESU.

This objective is only partly met. Because it is so severely constrained by development, flood management structures, and water diversions, almost all options for achieving the preferred future role of this population depend on the success of the many restoration activities proposed for the lower river in this 3-year work program.

Early development of elements of an adaptive management plan is crucial to the preservation of options for the recovery of this salmon population in so altered an environment.

Developing such a plan results in an ability to (correctly) evaluate system-wide responses and adjust management activities with confidence. Steps to develop some early indicators, performance measures, and triggers for evaluating the activities anticipated in this work program are vital and will increase confidence in preserving options for this population to achieve an appropriate role in the ESU.

3. Ensure that protection and restoration preserves and restores ecosystem processes for Chinook salmon.

This objective is only partly met with this work program. The protection of habitats in the nearshore environment is based on units that respect both functional and process-based boundaries within the nearshore environment. The use of drift cells as basic geomorphic shore units provides a useful physical template upon which to build habitat protection and

restoration projects. In the transition zone, however, as in much of the lower Duwamish, the ability of the plan to address whole process-based units is severely limited. In many cases, only fragments of the necessary functional units remain available for protection and restoration. Thus, smaller scale processes, i.e., those occurring at the habitat and patch scale rather than a segment or reach scale, tend to dominate the recovery strategy.

4. Advance the integrated management of harvest, hatchery, and habitat.

This work is just underway with the formation in January, 2007, of the Implementation Technical Committee (ITC). This group brings together, for the first time in this watershed, the several representatives of tribal, state and local governments necessary for the collaborative work required in H-integration. This is a first, and necessary, step in an integrated view of all management activities affecting the population. The PSTRT anticipates participating in the discussions around H-integration with the members of the ITC.

II. Policy Review Comments

The Recovery Council Work Group, an interdisciplinary policy team, evaluated each of the fourteen watershed work plans. The following questions guided the evaluation of the work plans updates.

1. Is the work program update consistent with the policy feedback and recommendations from the 2004 policy feedback summary, Recovery Plan Watershed Profiles - Results section, and NOAA's Federal Supplement?
2. Is the work program update tied to the objectives identified and at a pace sufficient to achieve the watershed's ten-year goals?
3. Are there significant elements missing and how might these be addressed?

In addressing these three questions, the interdisciplinary team noted accomplishments and strengths of the three-year work program update and also identified and discussed gaps and special issues warranting attention. A short discussion of comments common to all watersheds is provided below, followed by comments specific to the Green/Duwamish watershed.

General comments on 2007 watershed work program updates

Although the watershed 2007 work program updates reflect advancement in terms of project identification, many of the watersheds continue to have gaps, to varying degrees, that were identified in the 2006 work program review. Regional assistance to the watershed planning teams will be needed to address how best to fill the needs identified below.

Work Plan Accomplishments, Sequencing and Prioritization: Work program updates are a useful tool for defining progress toward plan goals and ESU-wide recovery. Narratives should be crafted to give a sharper focus on what each watershed expects to accomplish within the three-year period and identifying alternatives if they are unable to implement a given suite of actions. All work program updates could be strengthened by providing more

focus on how projects and actions are prioritized and sequenced. It is also important that the narrative provide sufficient information to enable watershed teams and regional reviewers to determine whether the pace of implementation is appropriate to achieve each watershed's ten- year goals.

Integrated Management of Habitat, Harvest and Hatcheries: All Puget Sound watersheds' work programs would benefit from additional efforts to achieve H-Integration. During 2006, all watersheds with Chinook populations have engaged in actions that reflect increased attention to the integrated management of habitat, harvest and hatchery. By the end of 2008, it is anticipated that those watersheds will have completed or substantially advanced efforts to accomplish the 6 Step process developed at the regional level by the H-Integration sub-group of the Adaptive Management and Monitoring Steering Committee. The Shared Strategy and TRT liaisons will continue to assist watersheds without independent Chinook populations concerning integrated management and the capacity of the nearshore to sustain natural- and hatchery-origin populations of all salmonids.

Monitoring and Adaptive Management: A regional monitoring and adaptive management plan is currently being drafted by Shared Strategy staff along with a work group of technical experts, which will guide monitoring efforts at the regional and fish population scales. Some watersheds have already begun putting together their own monitoring and adaptive management frameworks and initial monitoring tasks. The regional team will coordinate with those watersheds to ensure that both of the monitoring and adaptive management plans are consistent and complementary with each other. During the intervening time, the Shared Strategy staff, work group and TRT acknowledge that they play an important role in providing assistance during the coming year to ensure that all Puget Sound watersheds can engage in a coordinated and efficient process to develop, refine and implement a robust monitoring and adaptive management approach. This will enable watersheds and the region to assess progress in reducing uncertainties in the population and ESU-wide recovery. Shared Strategy anticipates that the regional plan will be adopted by the Recovery Council by the end of 2007. In the meantime, the Puget Sound TRT and Shared Strategy liaisons will assist watersheds who are poised to take the next steps in the development of their watershed monitoring and adaptive management plans.

Protecting and restoring ecosystem processes for Chinook and other species by preserving options and addressing threats are critical components of recovery planning both at the local and regional scale. Recovery actions have progressed from relatively straightforward work to complex and more expensive multi-year projects. All watersheds are challenged in terms of their capacity to acquire land in order to secure future options, and to implement the large-scale projects. The Shared Strategy staff and work group members acknowledge that additional efforts are needed at the regional scale to assist in securing resources that will enable watersheds to protect restoration options in rapidly developing areas and to implement projects at an appropriate pace to achieve ESU-wide recovery.

Water quality and Water Quantity: Water quality and water quantity will continue to be important issues for the long-term recovery of all populations within the ESU.

Work on water quality issues is within the authority of the Washington State Department of Ecology and will be primarily pursued through its implementation of the NPDES permit program and the establishment of TMDLs under the Clean Water Act throughout the ESU. However, watersheds can play an important role in ensuring that local jurisdictions implementing NPDES permits adopt water quality programs that include actions and regulations that protect and enhance water quality in rivers and streams that are critical for salmon recovery.

At the regional level, a work group has been established on instream flows to determine how to move forward the protection strategy identified in the Recovery plan. At present, the Plan calls for a 3-pronged approach to improving instream flows: (1) setting and/or revising instream flows under the authority of the Department of Ecology; (2) improving our scientific understanding of fish population needs in relation to instream flows, groundwater dynamics and relationship to surface water, as well as the implications of climate change on instream flows over time; and (3) coordinating water management decisions and actions within each watershed to avoid further degradation of instream flow conditions through the creation of Protection and Enhancement Programs (PEPs). Watersheds will play an important role in moving these issues forward in the near term. Each watershed should consider (1) advocating for appropriate instream flow rules in places where they are needed; (2) participating in the development of new science by sending technical staff to instream flow workshops planned in 2007; and (3) working with the Department of Ecology to begin creating PEPs in areas where instream flows hinder the recovery of fish populations. The TRT and Shared Strategy liaisons will assist watersheds in advancing water quantity and water quality actions.

Comments specific to the Green/Duwamish Work Program Update

The work program update reflects capital and non-capital projects and actions that are consistent with policy feedback provided in previous reviews and is tied to objectives identified in the watershed's ten-year goals. There is insufficient information to determine whether actions are being implemented at a pace sufficient to achieve the watershed's ten-year goals. Significant advancement has occurred in addressing gaps noted in previous comments.

Significant advances:

- Focus on Lower Duwamish and nearshore is more clearly articulated, with significant additions of nearshore projects, particularly in the Vashon/Maury Island Nearshore;
- Update includes a prioritized project list that identifies limiting factors addressed by each project;
- H-Integration process with co-managers (WDFW and the Muckleshoot Indian Tribe) has been initiated; and
- Framework for adaptive management developed and approved; currently working on monitoring protocols and full plan implementation.

Issues needing advancement:

- It is uncertain whether the watershed has sufficient capacity to implement all of the habitat capital projects while still making progress on H-Integration and components that are missing (hatchery, harvest, protection).
- Continued and substantial support from the U.S. Army Corps of Engineers, including management actions addressing flow, remains uncertain.