

Puget Sound Steelhead Recovery Team
 March 31, 2015 Meeting Summary

Decisions and Actions from Meeting

Decision	Notes
1. Accepted the draft February 24, 2015 meeting summary as final.	

Action	Assignment
1. Incorporate feedback into the Modeling Approaches Comparison Table and provide in advance of the April 28 meeting.	Tristan Peter-Contesse (lead) and experts of each model
2. Read the white paper from Joe Anderson comparing modeling approaches in preparation for the April 28 meeting.	Recovery Team members
3. Share a paper about intrinsic potential and a document defining pressures and stressors.	Ed Connor
4. Work together on talking points for life cycle model meetings, particularly on how the model relates to the recovery plan effort and how it differs from the TRT’s viability work. Circulate to Recovery Team members by email before April 28 meeting.	Elizabeth Babcock and Joe Anderson
5. Discuss the level of specificity in the watershed recovery plans (contingent on level of specificity in the DPS-scale recovery plan) and provide an update at the next meeting.	Elizabeth Babcock and Tristan Peter-Contesse
6. Review and prepare an update on the Recovery Team workplan.	Elizabeth Babcock, Bob Wheeler, and Claire Turpel
7. Hold August 6 & 7 as potential work session and field tour; respond to Doodle poll ASAP.	Recovery Team members

Welcome, Announcements, & Old Business – Bob Wheeler, facilitator, welcomed the Puget Sound Steelhead Recovery Team (Team) and led introductions (*please see end for a list of participants*). He reviewed the agenda which had no suggested changes. A contact information sheet was passed around for Team members to confirm their information.

Announcements – A Team member noted that the marine survival funding was included in both the House and Senate budgets, along with the Governor’s budget.

February 24, 2015 Meeting Summary – the draft meeting summary had no suggested edits and was accepted as final. This final version will be posted on NOAA’s webpage about the Team’s work.

Various Watershed Approaches & Compare Modeling Approaches – Bob Wheeler and Elizabeth Babcock provided context prior to the Team discussing various modeling approaches at the watershed level. The Team has discussed in previous meetings that EDT might be a good tool to use for modeling at

the watershed level but it has also been noted that EDT is not a perfect tool and there are other modeling approaches that might better fit the needs. Therefore, after discussion at the last meeting Tristan Peter-Contesse volunteered to lead the effort to identify and compare other modeling approaches. This discussion was the beginning of further Team discussion on modeling, and the Team should discuss at this meeting and the next few what additional information is needed to make an informed decision.

- It was noted that not much is known about the funding opportunities for any of these modeling approaches at this time.
- A Team member added that this is a different situation than the one for Shared Strategy, so the Team has more time to more fully consider the various approaches and which outcome is most effective given the parameters and how it relates to existing recovery efforts like the Puget Sound Action Agenda.
- The Team discussed that the ideal outcome would be to give the watersheds specific guidance on a few modeling tools, so the choice is at the watershed level.
 - A participant added that the local watershed recovery efforts are already overloaded with requests from multiple directions so it will be key to show the watersheds the importance of participating in this recovery effort.
 - A Team member noted that the watersheds have differing amounts of data so one model might be the best option in all watersheds.
- A Team member noted that have a model(s) that predicts recovery needs at the local level is more systematic than best professional judgment.
- It was noted that the team working on the life cycle model is working at the population scale. They are developing some ideas that they hope to get feedback on from local biologists at the three meetings scheduled around the Sound (April 30, May 13 & 15). That feedback will help sculpt the model. They will also need to consider data, partly because the lack of data makes it harder to model the freshwater life cycle stages.

The Team reviewed the draft table comparing modeling approaches, edited the column and row headers, and identified some information to include within the table. This information will be incorporated into a later draft and shared with the Team in advance of the next meeting. The table was significantly edited during the meeting so some discussion points were captured in the updated version, but other discussion points are included here:

- The Team discussed the column headers (various modeling approaches) and added a formal decision theoretic (DSS) to be compared with the other models.
- The Team discussed the row headers (criteria against which to compare the models) and added several, including: VSP metrics, flexibility, uncertainty, scale, specificity, ability to validate on testable hypotheses, and resources needed to make the model work.
- It was noted that the life cycle, SHIRAZ, and RIPPLE models are similar. SHIRAZ in Snohomish was based on a life cycle model that Ray Hilborn developed in the Green River. The SHIRAZ templates are in Excel and VBA-Excel formats, plus a version in R, so they can be adapted for different datasets. Similarly, RIPPLE is an adaptation of SHIRAZ, but it is proprietary.
- It was noted that the audience for this comparison table is only the Team; at this point it is an informal alternatives analysis so the Team understands how and why they arrived at a decision. At some point it may be important for the Team to explain their decision of guidance tools to the

watersheds in a defensible way, but they may choose to communicate that with something other than this table.

- A Team member noted that at the reach scale, habitat assessments are the most common way to gather data (such as GIS or on-foot assessments). If there is no fish data at the reach scale, it must be collected in some way or the model should focus on the habitat data inputs. Additionally, steelhead often move from reach to reach so the data should reflect that flexibility. It is likely that not much of these data exist except possibly some old studies on the Olympic Peninsula.
- Because many models use very similar data inputs, it is likely that the Team could use more than one model using the same information.
- Jeanette Dorner noted that Nisqually has a library of data from their recent EDT effort. This could be useful at some point for the Team to consider how they collected and used the data.
- The concept of “scalability” was discussed – most models can be done on a spectrum or more to less intensive, so this will be incorporated into the table. This is also true for how much data is needed to populate the model.
- Since the life cycle modeling effort will be done first, the comparison table could also address how each of the additional models would fill the gaps from the regional modeling effort.
- The Team discussed how intrinsic potential applies to the watershed modeling effort. Though it is not its own stand-alone model, it will be an important part of the life cycle model. Ed Connor offered to share a paper about intrinsic potential.
- The Team agreed to spend more time on the comparison discussion at their next meeting, and not invite Greg Blair to talk about EDT at this time since he already presented to the Team in 2014.

Draft Recovery Plan Outline – The Team reviewed the assignments from the last meeting. Discussion included:

- Drafting the watershed and management units section (Section 1.5.2) will be done by a team of experts from various agencies. The Puget Sound Partnership (PSP) has created a draft of an interactive online map that helps reconcile Chinook and steelhead watersheds and other management units. PSP is willing to convene this group to identify a workplan to get this section drafted, and to use this online map as a discussion guide.
- Jeff Hard provided a list of references for the periodicity table. It was noted that this table is a preliminary version only and should be vetted with local and co-manager biologists. This might be part of the package for review at the life cycle model meetings in late April and mid-May.
- Ned Currence and Ed Connor identified a short narrative for the section on the bull trout recovery effort (Section 1.5.4.1). The bull trout recovery plan will be done by September 2015 so explanation of this effort can be completed once the bull trout plan is finalized.
- PSP provided draft language for Section 1.5.4.6, which introduces the Puget Sound Action Agenda.
- The Team agreed to add to several sections in the introduction a piece about the future.
- The Team agreed to keep some of the draft narrative for the marine survival plan in the introduction and move some of it to the module in the appendices.

Compare Language for DPS and Watershed-Level Recovery Plans – Tristan Peter-Contesse had identified the required elements of both a DPS-scale and watershed recovery plan, and provided a

comparison of the similar elements. The Team discussed that the required elements have similarities but do not always use the same language, and that they would like to provide more consistency in the language. Discussion included:

- The required elements are necessary to include but do not have to be in a certain order or use a certain name.
- The Team made some changes to the language and order of some headers in the DPS-scale recovery plan, including:
 - Add TRT viability criteria after “recovery scenarios for the DPS”.
 - Change “achieving broad sense goals after de-listing” to “broad sense goals” and move it before “NMFS de-listing criteria”.
- A member encouraged the Team to clarify these headers internally before it is shared at the life cycle model meeting and beyond. The life cycle modelers hope to show how the model relates to the recovery plan and how the effort to write the recovery plan differs from the de-listing criteria that the Technical Recovery Team (TRT) did, which focuses on viability. Elizabeth Babcock volunteered to help Joe Anderson with talking points for the life cycle model meetings, and they will circulate these draft talking points to the Team before the next meeting.
- Watershed plans are not required as part of recovery plans, but site-specific actions that will lead to recovery are required and that can be accomplished through watershed plans.
- The Watershed Template Workgroup is tasked with creating a template for watersheds to use that mesh together the DPS-scale and watershed recovery plans.
- It was noted that to participate in creating a watershed plan, local watershed biologists often need capacity funding but also technical and policy capacity beyond funding needs.
- In the watershed recovery plan outline, “theories of change” and “explicit hypotheses” are similar yet distinct:
 - Theories of change – the actions or series of actions would lead to a reduction of stresses to the ecosystem, which would in turn restore fish populations.
 - Explicit hypotheses – what is constraining a population.
 - It was also noted that results chains are broader-based strategies and explicit hypotheses are for specific indicators and monitoring programs, of which you can test a hypothesis.
- It was clarified that “geographically explicit” means DPS, MPG, and DIP goals along with goals for the fishery.
- The Team agreed that the elements of the watershed recovery plan are contingent on the level of specificity in the DPS-scale recovery plan. Elizabeth Babcock and Tristan Peter-Contesse will talk before the next meeting to provide the Team with an update on this.

Workgroup Progress Reports

Recovery Goals & Scenarios Workgroup – This Workgroup is currently focused on developing the life cycle model. Updates included:

- The post-doctoral researcher who will lead the modeling effort, Dr. Phil Sandstrom, has been hired and has started the modeling effort.
- The group has scheduled three life cycle model meetings around the Sound, in each Major Population Group (MPG). These will be April 30, May 13, and May 15.

- The goal of those meetings is for a dialogue: for the modelers to share their goals of creating the life cycle model, and for local and co-manager biologists to give input on how the model should be developed and what data already exists in the watersheds.
- The audience of the meetings: mainly steelhead biologists and managers familiar with steelhead populations and their habitats. The meetings will be technically oriented.
- General agenda: introductions, overview of the recovery planning process and how this modeling effort fits in, overview of the model and feedback, and open-ended conversation about different ways to incorporate regional expertise into the model.
- The group hopes to have a very basic demographic model by the end of April, and they hope to talk with local and co-manager biologists about broad datasets that can be used in the modeling effort.
- The group hopes to circulate background information before the meetings with guiding questions so attendees know what to expect.
- Phil went through some technical details of the model, including:
 - In some systems, estimates exist on spawners and in other systems estimates exist on smolts. Snow Creek has a long-term dataset which can be used to recreate the smolt-to-spawner relationship.
 - The modelers will use intrinsic potential models, which can be used to understand different populations at different sizes.
 - To make a two-stage life cycle model, they will adding in early and late marine survival stages. Then they will apply a spatial component to the early marine survival stage, and a temporal component to the late marine survival stage. The marine survival data comes almost exclusively from the early marine survival research and workshop.
 - Then the modelers will do population projections.
 - The hope is that the model will illustrate the parameters that need more information.
 - Other notes:
 - WDFW is hoping to tag steelhead in Nisqually this year and collect the survival data from those fish.
 - The Team discussed how roughly 90% of marine mortality happens in the first few weeks or months of the marine stage. This seems similar for other salmonids, but only anecdotally.
 - A Team member mentioned that similar work was done in the Nisqually about fifteen years ago, and when reviewing the method people mostly wanted to know why the Ricker method was used instead of Beverton-Holt. The workgroup responded that they are prepared to talk about their methodology, though they can easily apply both methods.

Watershed Template Workgroup

- This Workgroup has two meetings coming up: end of April and end of May. The April meeting will be a focused work session to develop guidance for the watershed chapter template. They will have experts in the Nisqually and Hood Canal pilot projects to talk about what was done in those projects and lessons learned.
- The next meeting is April 23, from 9am – 12pm and anyone from the Team or other watershed experts is welcome to join.

Pressures & Stressors Workgroup

- Ed Connor and Tristan Peter-Contesse are producing an initial high-level summary documenting stresses, then will compare those to the Puget Sound terminology.
- It was noted that “pressures and stressors” is a better name for this workgroup since pressures lead to stressors. Ed will post to the Google Drive a document explaining the difference between pressures and stressors.
- They hope to look at pressures specific to steelhead that were not captured by the Puget Sound Pressure Assessment.
- This work will go into Section 5 of the Recovery Plan, and can be informed by the life cycle model, Steelhead Foundations document, biological assessments, etc.

Work Session & Field Tour – The Team discussed having a summer meeting that spans two days, allowing for the Team to dive into greater detail and also have time for a field tour. The Elwha was suggested as the location for the tour, and August 6 and 7 were suggested as dates that work well for George Pess to give the field tour. The budget includes roughly \$700/Team member to help with travel reimbursements.

There are potential conflicts with the August 6/7 date so a Doodle poll will be circulated soon with alternative dates.

Public Comment – there was no public comment at this meeting.

Next Steps

- April 28 meeting:
 - PSP will check if they can host the meeting in Tacoma.
 - Topics: Recovery Plan sections, model comparison, workgroup progress reports.
- June 5 meeting:
 - WDFW will host at the Natural Resources Building in Olympia.
 - The main focus of the meeting will be on marine survival with some time for regular Recovery Team business.

Participants

Name	Affiliation
Joe Anderson	Washington Department of Fish & Wildlife
Elizabeth Babcock	NOAA's National Marine Fisheries Service
Alan Chapman	Lummi Natural Resources
Ed Connor	Seattle City Light
Ken Currens	Northwest Indian Fisheries Commission
Jeanette Dorner	Puget Sound Partnership
Jeff Hard	Northwest Fisheries Science Center
Steve Hinton	Skagit River System Cooperative
Neala Kendall	Washington Department of Fish & Wildlife
Paul McCollum	Port Gamble S'Klallam Tribe
Randy McIntosh	NOAA's National Marine Fisheries Service
Tristan Peter-Contesse	Puget Sound Partnership
Scott Powell	Seattle City Light
David Price	Washington Department of Fish & Wildlife
Phil Sandstrom	Washington Department of Fish & Wildlife
Bob Wheeler	Triangle Associates
Claire Turpel	Triangle Associates