Interior Columbia Technical Recovery Team Meeting #14, March 12th and 13th, 2003
Portland, OR

Members present: Carmichael, Cooney, Howell, Johnson, McClure, McCullough, Petrosky, Schaller (12th only), Spruell (13th only), Utter
Non-members present: Joe Carlson (Cramer and Assoc.), Holzer, Kozakiewicz, Waples, Zabel

I. Update of TRT contract renewals, misc. business

Fred -- will need new contract type
Phil – needs to check on contract period
Pete and Charlie – all needs covered

II. Brief Review of TRT products:

1) Define ESU populations and describe them
2) Population viability criteria for healthy populations. Parameters include abundance, productivity, spatial structure, and diversity.
3) Interim monitoring and evaluation (M+E) recommendations to monitor stock and habitat status.
4) Evaluate alternative ESU delisting scenarios.
5) Summary of habitat/fish productivity and relationships. – we will need to determine what we think is a credible assessment? COE has supplied funding for a report on this.
6) Factors for decline—limiting factors—in coordination with subbasin planning. Population-specific factors when possible.

*Possible completion date for Phase I (products 1-4): December 2004.

III. Out-of-subbasin survival estimates (relevant for products 2, 6)

* Rich Zabel (NOAA Fisheries) has been given the task of generation out-of-subbasin estimates (OOSEs) for all ESUs in Columbia Basin. Relevant OOSE:
  - migratory corridor survival
  - harvest
  - (adult) ocean survival
  - estuary/near-shore ocean survival

Rich plans to develop these estimates in a deterministic matrix model framework, and distributed a "primer" on matrix analysis. Allows comparison of stage-specific survivals, annualized population growth rates, etc. across ESUs, as well as sensitivity tests on matrix elements (parameter estimates). He will coordinate with the TRT as he develops these estimates.

TRT members comments/discussion

- proportion of hatchery spawners, and hatchery spawning success will be critical to parameter estimates
- densities at which data-based estimates were derived should be noted – much data collected at low adult spawner density (which may affect survival rates)
- concern about ESU viability estimates – this is TRT responsibility
- would like to see estimates for unlisted ESUs also

Plan for finding data for OOSE for interior:

1. Hatchery proportion: hatchery fish effectiveness / proportion of hatchery spawners
   Tom to coordinate
   TRT will examine its populations' hatchery proportions for viability assessments

Suggestion: work through populations hierarchically starting with areas of low hatchery contribution
Damon and Tom Good will link population boundaries to status review data

2. Hydro: Hydro Research, Monitoring and Evaluation group (NMFS, BPA, CoE) is revisiting migration corridor survival as part of the 2000 (FCRPS) BiOp. Rich plans to use their results for the hydro part of his model. Snake River Spring/Summers are completed.

3. Harvest: Point people: Charlie, Howard and Tom

4. Ocean and Estuary: Sources of smolt to adult return (SAR) data:
   - Subbasin summaries
   - Chuck Peven for steelhead SAR: aggregate returns at the dam, smolt output estimated
   - Yakima: Dave Fast
   - Allen Burn for steelhead survival estimates from LGD tributaries
   - Imnaha: Jay Hesse
   - Deschutes: Rich and Chilcote (track disease record for steelhead)
   - Umatilla: steelhead smolt output and adult return
   - SMP data: Wild steelhead and chinook smolt tagging
   - Robert Kope has ideas on estimates of ocean survival rates.

5. Michelle, Tom and Rich Z. will send out clear data request Members to send ideas to Henry for compilation. Rich Z. will follow up on data.

Future issues for OOSE:
Develop time frame for each ESU/population
Originally intended Rich Z. to return at next meeting – he will actually return at May's meeting.

IV. Status Review Update
- Spreadsheets showing time series, %hatchery and % by age class are posted on Docushare
- Lambdas were calculated, but no extinction analysis was performed due to the lack of a good carrying capacity estimate.
- Issue: (MC Steelhead) effect of strays on results from Sherar's Falls tagging program
- Co-manager reviews of data set quality **due by March 21st**

V. Monitoring and Evaluation (Relevant for product 3)
1) Chinook data needs:
a) Snake River Spring/Summer:
- Genetics allozyme data for areas outside Grande Ronde, microsat data for the entire Snake: emphasis on Upper and Middle Fork Salmon River.
- Better spawn timing information: especially to examine Spring/Summer split. Confirm split with microsat data?
- More juvenile life history information
- Dispersal / Straying data
- Fine scale morphology
- Origin of hatchery fish and outplant records

b) Upper Columbia:
- Dispersal / Straying data (wild)
- More widespread juvenile information
- Resample Wenatchee Basin, especially White River "outlier" (genetic)
- Continued genetic sampling to assess hatchery influence on population structure

- Analyze any pre-Grand Coulee archived materials

c) Snake River Fall:

- Analyze any samples taken during Oxbow Dam construction
- Historic picture of Fall run fish in the Clearwater
- Assess impact of Umatilla River hatchery fish
- Assess competition between natural spawners and Lyons Ferry fish

2) Steelhead data needs:

a) All areas

- Sample resident and anadromous forms- paternity analyses

b) Snake River:

- Highest priority: spawner distribution, especially mainstems
- Dispersal / Straying data
- Genetics: Finer scale microsat data
- Life History: all kinds (both juvenile and adult), especially A run vs. B run and age structure
- Examine genetic outliers such as the three Grande Ronde tributaries
- Sample resident and anadromous forms- paternity analyses

c) Deschutes River

- Determine residence times and spawning distribution of hatchery strays
- Sample the Klickitat and sub-species boundary on a finer scale
- Assess historic habitat conditions / spawning connectivity

d) John Day River

- Assess historic habitat conditions / spawning connectivity
- Finer scale genetic sampling

3) Other considerations:

a) Christine Moffett has Bjornn scale collection with samples such as pre-introduction Lemhi resident rainbows
b) Sockeye: genetics vs. kokanee, historic populations such as Wallowa Lake
c) Rank relative importance of data needs
d) Need summaries of various existing monitoring plans: OR, WA, NMFS, and CBFWA
e) Next meeting: review monitoring and evaluation outline, assign tasks and draft summary of TRT interaction with M & E (Actual date: May meeting)

VI. ESU Stratification (ESU viability issues)

Summary of the other TRTs' approaches, and example of stratification using climatic factors.
Discussion

a) Possible factors for stratification:

- Population Size
- Lambda
- Connectivity: dispersal distance, physical connectivity
- Habitat Conditions: capacity
- Limiting factors: risk
- Genetic diversity
- Life History diversity

b) Could also take "core population" approach
c) Metapopulation modeling may also be appropriate

VII. Subbasin Planning

Issue 1: Selecting one to three Interior case study areas or subbasins. Possible criteria:

- Areas with active subbasin planning groups
- Areas (subbasin groups) using an approach TRT considers appropriate
- Subgroup will summarize timeframes and approaches for next meeting

Issue 2: Clearwater subbasin plan was critiqued by ISRP – does TRT want to offer suggestions?

- Tom, Charlie, Pete, Dale will review and present assessment and suggestions in preparation for meeting on April 10/11 in Boise

Issue 3: Ultimate goal: generate credible assessment methods

- Read Puget Sound TRT document (homework)
- After TRT determines general approach/methods – should present to NW Power and Conservation Council
- Case study provides opportunity to use EDT appropriately/test assumptions, etc.

VIII. Steelhead Population Identification

Population boundaries were discussed in reference to possible incongruities across species, between ESUs or subareas, or with other TRTs.

Refined boundaries, particularly with respect to adjunct or dependent tributaries, and re-iterated main criteria for population boundaries as following:

1) Deschutes: 2 populations, split by ecoregional and environmental conditions, some spawn timing data

- Westside tributaries population
- Eastside tributaries population
- Mainstem spawning areas allied with closest tributaries

2) Umatilla: 1 population, genetic data showed no geographic structure, spawner distribution was continuous, and no major breaks in ecoregion data.

3) Walla Walla: 2 populations, split by genetics, distance between spawning areas, and ecoregion

- Touchet
- Walla Walla River

4) John Day: some genetics data, demographic correlations, and ecoregions divided the basin.

- South fork was very distinct genetically, although samples may include residents.

5) Fifteenmile:

- Eightmile Cr. genetic samples very distinct -- check gametic disequilibrium for the possibility of a small number of spawners

6) Klickitat:

- summer and winter runs lumped into one population due to overlapping spawner distribution and lack of genetic difference (from juvenile /sport fishing samples). A difference in run timing may not translate into a difference in spawn timing.

7) Yakima: 3 populations, divided by genetics, spawner distribution, historical geograph (isolated by mainstem temperatures)

- Satus and Toppenish Creeks
- Upper Yakima
- Naches

8) Tucannon and Asotin: 2 populations, although similar genetically, (but with high interannual variation), great distance between (with several intermittent streams between them

- Tucannon (+ Alakali, Almohta, Penwawa and Alpowa)
- Asotin

9) Grande Ronde: 4 populations on the basis of genetics, spawning distribution and ecoregion

- mainstem above the Wallowa River was lumped with the Upper Grande Ronde because of genetics, ecoregion, and the major decision point at the mouth of the Wallowa.
- outliers (Mud, Prairie and Dry) still an issue – possibly resident influences

10) Imnaha: 1 population, as there are no large genetic differences to divide this basin.

11) Clearwater: 6 populations, divided by genetics, life history (A run vs. B run) ecoregion, major watersheds and their geographic characteristics. One of the six is the North Fork, now Dworshak hatchery stock.

12) Salmon: divided by life history (B-run fish in the South Fork and Middle Fork), spawning distribution / connectivity, genetics, basin size, and ecoregion. Specifically:

- Little Salmon is separated by basin size and geographic separation
- Secesh is separated from South Fork by genetics
- Chamberlain Creek is distinguished from dependent Salmon trib groups by its size
- Middle Fork is divided largely by habitat differences
- Tributaries to mainstem above Pahsimeroi are lumped with nearest major spawning
- North Fork is distinguished from Upper Salmon trib groups by its size

13) Hells Canyon: -- now lumped with other populations – Lower Salmon, Grande Ronde and Hells Canyon Hatchery

14) Lower Mainstem Salmon: Independent population, core areas White Bird and Slate Creeks.

15) Former Snake River Canyon: split into 2- lower tribs around Chamberlain, Upper w/ extirpated Panther (Chamberlain diff. Based on habitat)