Interior Columbia Technical Recovery Team meeting #18, June 30th – July 2nd, 2003
Seattle, WA

Members present: Carmichael (video conference), Cooney, Hassemer, Howell, McClure, McCullough, Petrosky, Schaller, Spruell, Utter
Non-members present: Carson, Holzer, Piasecke, Waples, Jordan (NWFSC), Kozakiewicz (NMFS Boise), Talbot, Hyun, and Sharma (CRITFC), Martin (EPA), Garrity (American Rivers)

I. Risk Assessment Modeling

Presentation by Columbia River Inter-Tribal Fish Commission members Talbot, Hyun and Sharma, discussion of integration of efforts with the TRT.

II. Population Identification -final determinations / clarifying boundary justifications

A) Snake River Spring / Summer Chinook

1) Alturas Lake Creek: The main reasons for separation from the Upper Salmon population were a strong genetic difference and possible unique characteristics derived from migration through Alturas Lake, despite connectivity to other spawners via spawning in the lake outlet. However, a small sample size (3 redds) calls the genetic sample into question, because of vulnerability to genetic drift.

Three Options were considered:

- Leave it independent
- Split the population, connecting the lake outlet with the Upper Salmon population and leaving the inlet separate and independent
- Include the entirety of Alturas Lake Creek in the Upper Salmon population, identifying it as an important and potentially unique substructure component.

Because of the questionable genetic evidence and lack of other distinguishing characteristics such as geographic separation, the Alturas Lake Creek population will be combined with the Upper Salmon population.

2) Yankee Fork: Oldest available abundance data suggest that the basin may not have been able to support the 500 spawner minimum criteria for independence. However, these numbers (from the 50's and 60's) were still collected after the catastrophic dredge mining operation which greatly reduced productivity. The basin's capacity before that disturbance most likely could have supported the minimum.

3) Lemhi River: Extirpated by an early diversion dam and reestablished? The Bjornn report states that Spring Chinook gained passage over the dam during higher flows, and that only summer chinook were extirpated from the Lemhi.

4) Little Salmon River: Include in a major group of populations or leave "unaffiliated"? Since the Little Salmon population does not share general characteristics with either adjacent group (Grande Ronde or South Fork Salmon) the population will remain unaffiliated like the Chamberlain Creek population.

5) Bear Valley and Marsh Creek populations: Might the genetic differences detected between these two contiguous populations be due to genetic drift of sampling error? The populations will remain separate, but a note will be placed in the genetic appendix about this possibility.

6) Valley Creek: Because of low genetic and geographic distance, should the Valley Creek population be lumped with the Upper Salmon population? The population will remain separate on the following basis:

- The genetic similarities to the Upper Salmon samples may be due to influence from Sawtooth hatchery, both samples cluster closely with the hatchery.
- Although there is connectivity to the mainstem via lower Valley Creek, the bulk of spawning occurs a considerable distance upstream, increasing the geographic separation.

7) Asotin Creek: The TRT defines extirpation as zero returns for a minimum of a generation. Since there is reliable evidence of wild spawning in Asotin Creek, however limited, which cannot be attributed to hatchery strays, and the basin most likely could have supported the minimum abundance criteria historically, Asotin Creek will be considered an independent population. The designation will include a note about this population's severe genetic bottleneck.

B) Snake River Steelhead

1) North Fork Clearwater: The anadromous portion of this population was extirpated in the wild by the Dworshak project. This designation will include notes about possible viable genetic material contained in the hatchery stock and in residents above the dam.

2) South Fork Clearwater: The anadromous portion of this population was extirpated by Harpster Dam, operated from 1949 to 1963 at rivermile 30 (on or near the population boundary). This population has been reestablished by either migrants, hatchery outplants, interaction with resident fish or a combination of the above.

3) Hell's Canyon tributaries: This population was not completely extirpated by Hell's Canyon Dam, because of production in tributaries below the dam. However, currently this population will be considered demographically dependent on hatchery production.

4) Salmon Canyon tributaries: Some A-run tributaries, such as French, Wind, Sheep and Crooked creeks, have been linked to the South Fork Salmon (B-run) due to geographic proximity. These tributaries will now become part of the Chamberlain Creek population, the nearest upstream A-run population.

5) Lemhi River: Extirpated by an early diversion dam and reestablished? Although the Bjornn report does not state specifically, it is likely that some steelhead gained access to the Lemhi during higher flows. This population will not be considered extirpated, but a note will be included about this possible genetic bottleneck.

6) Panther Creek: Was this population extirpated by Blackbird Mine as with chinook? Accounts use the unclear language "essentially extirpated". This population will be considered extirpated with possible viable genetic material existing within the resident population above the mine.

C) Middle Columbia Steelhead

1) Willow Creek: Do steelhead exist in this Columbia tributary? Rich Carmichael will search ODFW records for any evidence of this.

2) Upper Yakima River: This area was continuously occupied by anadromous steelhead. Blocked areas within this watershed as well as the Naches River watershed will be noted: Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes.

3) Lower Yakima: More information can be acquired about the lower reaches of the Yakima in Jack Stanford's "reaches report" and a UW masters thesis by Burman and Quinn.

4) White Salmon River: This population will be designated extirpated.

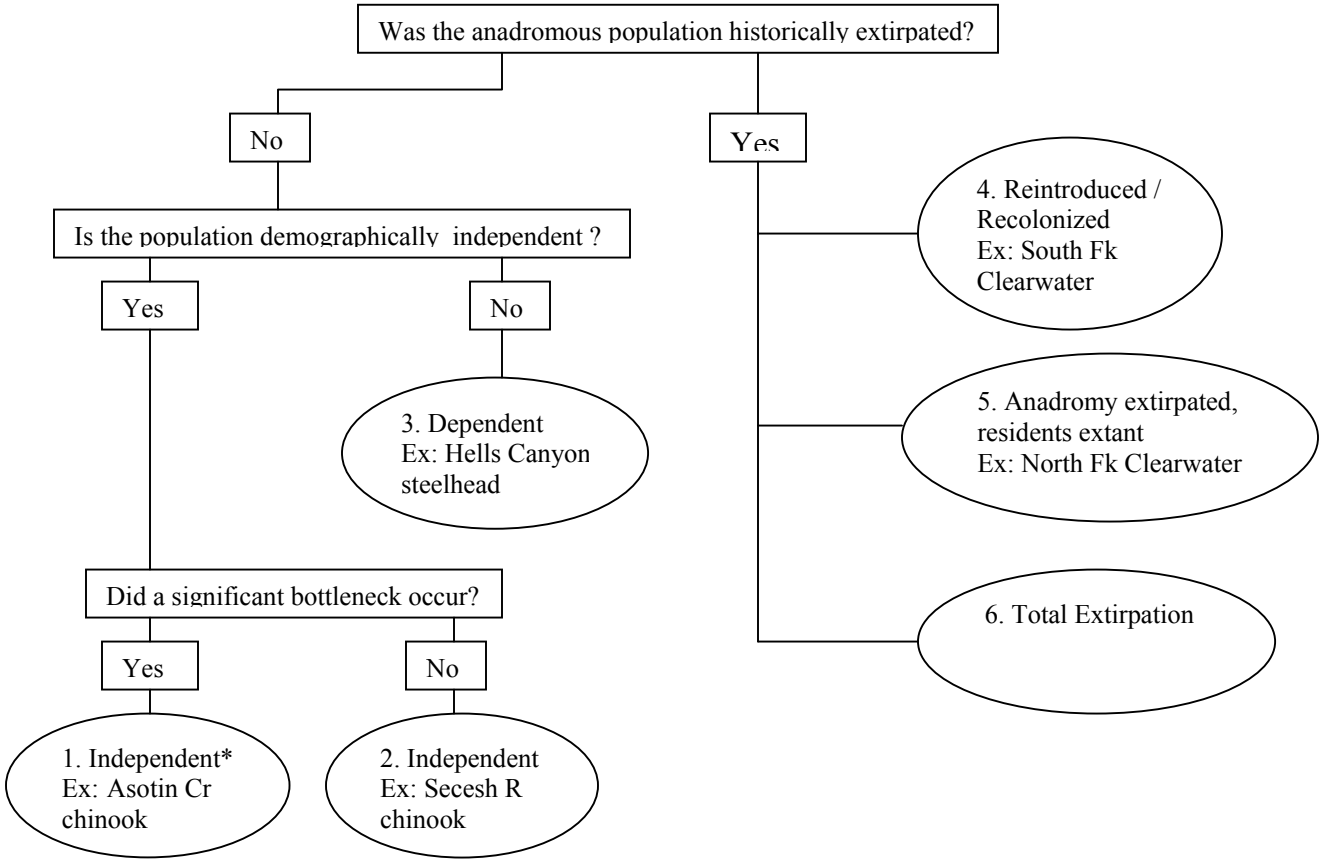
5) Deschutes above Pelton Dam: The write-up for this area will reflect the philosophy:

- Anadromous and resident populations contribute to the same gene pool
- Blocked areas that were formerly accessible may contain remnant of the historic gene pool.
- Resident populations may be a source for reestablishment, although there in no guarantee that anadromy would arise if the blockage were removed.

This area will be presented on maps with an outline of the watershed above Pelton. The various major tributaries will be described in the text.

III. Population status

Populations can be divided into one of six categories using the following flow chart:



IV. Population Identification Document Additional Sections

A) Core Spawning Areas

Core spawning areas are defined as the area with the highest density of spawning within a population boundary. Available information, by ESU:

1) SR SSCH : A table has already been created, but needs refinement
2) SR SH : Thurow data can be used (South Fork and Middle Fork Salmon) supplemented by the zero age database
3) SR Falls : Chapman table and map, and the Conner / Garcia report
4) Sockeye : Completed

5) UC CH : WDFW Redd surveys
6) UC SH : Chelan PUD telemetry data – with reservations about the conclusions that can be drawn from the data
7) MC SH : Some data exist for the John Day, Deschutes tributaries, Naches, Satus and Toppenish creeks

A paragraph will be added to areas where core spawning areas cannot be determined outlining data needs for that area. If useful, we can explore expanding index reaches or other methods to derive unknown spawning distributions for the second draft of the document.

B) Diversity

The document will include a table with following information by population:

- Spatial Structure designation : Branched continuous, etc.
- Life History : Run timing
- Genetics : Any noteworthy diversity within the population
- Hatchery : Degree of outplanting in basin, within ESU and outside ESU fish
- Habitat: Major habitat differences within the basin

C) Data types used in making decisions

The table created early on in the process could be misleading when standing alone – many of the data types that were ranked of high value were not available for many populations and therefore had no value in making population identification decisions. The table will be revised to reflect the actual weight of data in making decisions; the text will include notes about the ideal weight of data were all types available and reasons why certain data were not used.

D) Conclusion

The conclusion should include the following additional sections:

- A comparison of population sizes across species
- Recommendations for using population structure in management
- Comparisons with other TRT's population identification documents
- A summary of the monitoring and evaluation needs (already included in ESU sections) including Chinook and Steelhead demographic information needs
- Comparisons with previous state population identification efforts:
  - Washington: Brannon Report, SASSI
  - Oregon: Biennial Natural Production Report, Chilcote
  - Idaho: Management Plans

V. ESU Strata

The three viability criteria levels are population, stratum, and ESU. Connectivity (genetic exchange) must be balanced with risk (of catastrophic loss). Other viability criteria methods will be explored, such as a metapopulation model. Three candidate schemes to divide strata:

1) By major ecoregion
2) By temperature and precipitation overlaid with life history information
3) By geography overlaid with life history information

Option three seems the most valuable for the Interior ESUs. The Willamette / Lower Columbia TRT used ecoregions (option 1) because their populations seldom crossed ecoregion boundaries, whereas the interior populations often do. Ecoregions can be used to describe diversity within strata. Geography is important because of shared migration corridors. The following is a first cut at strata within three ESUs.

A) Snake River Spring / Summer Chinook

1. Tucannon River and Asotin Creek
2. Grande Ronde and Imnaha Rivers
3. Little Salmon River
4. South Fork Salmon River } Lump for strata purposes only?
5. Chamberlain Creek
6. Middle Fork Salmon River
7. Upper Salmon River

B) Snake River Steelhead

1. Tucannon River and Asotin Creek
2. Clearwater River } Regroup along A-run / B-run lines?
3. Salmon River
4. Grande Ronde River
5. Imnaha River

C) Middle Columbia Steelhead

1. Lower Columbia tributaries (Klickitat, Deschutes, etc.)
2. John Day River
3. Rock Creek (unaffiliated)
4. Umatilla and Walla Walla Rivers
5. Yakima River

VI. Spatial Structure Criteria

Three ways to classify spatial structure differences between historic and current conditions:

1) Range reduction
2) Loss of branching
3) Change in distribution within areas historically and currently occupied

What metrics can be used to describe these changes?

A workgroup will convene before the next meeting to set draft spatial structure criteria using several example populations. Carmichael, Howell, McCullough and Holzer.

VII. Monitoring and Evaluation

Presentation and discussion led by Chris Jordan (NWFSC) about the Columbia Basin monitoring and evaluation effort and possible interaction with the Interior Columbia TRT.

VIII. Metapopulation Theory

Presentation and discussion led by Eli Holmes (NWFSC) about her work in metapopulation dynamics and possible applications during the Interior Columbia TRT viability process.