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In attendance: Upper Columbia, Yakima basin (Mid. C. Steelhead), and Snake R. (sp/fall Chinook & Steelhead) recovery planners.

I. Upper C. Division
    a. Overview of recovery plan
        i. Difficulty with steelhead run reconstructions
    b. Preservation and Restoration classes (handout)
    c. Limiting factors driven by abundance and productivity
    d. Verification of EDT results
        i. Compare with findings of watershed groups to help validate
        ii. Important to back up EDT results with an alternative model or other checkpoints
    e. How are Washington criteria different from NOAA goals?
        i. described checkpoints for recovery
            1. classification upgrade
            2. delisting threshold
        ii. go beyond viability
            1. ex. Define harvestable populations
            2. all regions require going beyond delisting to harvestable
        iii. state has a broad-sense recovery goal
    f. Report in 6 weeks will include:
        i. Stakeholder report
        ii. Cost/benefit analysis
        iii. Amount of habitat to be recovered
        iv. Suite of actions (H's)
        v. Crab creek will likely not be included in forthcoming plan
            1. no historical info, possibly more reliant on a resident component

II. Yakima Basin
    a. Not much funding available—need specifics
    b. One recovery plan for Steelhead and Bull trout
        i. Modern Yakima basin is extremely modified for irrigation/agriculture
        ii. Altered flow regime
            1. Upper Yakima water storage dams yield cooler temperatures than presettlement conditions
            2. Lower Yakima—end of spring water issues drops flows to very low levels
            3. Hampers ability of black cottonwood to flourish (important to riparian areas)
        iii. Two important components in the recovery plan:
            1. Restoration of flow regime is a high priority in an action plan
            2. Add ladders for Bull trout – reintroduction to their historic range
        iv. How would these 2 components fit into the VSP parameters?
            1. Altered hydrograph curtails major life history patterns
            2. invasive species have a deleterious effect on abundance
        v. Tribs and mainstem are both important in the restoration of production
            1. Link tribs via mainstem (Naches & Yakima)
                a. Do population types need to be reclassified to show the mainstem as spawning habitat?
                b. Need to describe how the steelhead would use the mainstem
                c. How would linking MSAs via the mainstem change MSA designation?

      vi. Must be able to route fish (mouth – spawning grounds – rearing – return)
- c. TRT considerations
  - i. Population management actions
    1. How does the kelt reconditioning program positively or negatively affect the population (genetic concerns, etc.)?
       - a. What is the historical kelt return rate?
       - b. Could the program be a part of the recovery effort?
    2. How are assessment units classified and prioritized?
    3. Lack of consideration for other in-basin strategies
    4. Is planner use of MSAs consistent with the way the TRT intended them to be used?
    5. two issues concerning out of sub-basin effects
       - a. what role do the recovery plans have in tributary habitat?
       - b. Disconnect between Washington and NOAA deadlines
  - ii. How can the TRT better help set recovery strategies?
    1. Make a list of questions for the draft that would have to be addressed (broad topics)
    2. make a prioritization strategy
       - a. draw from previous EDT memo
       - b. summarize hatchery concerns
         - i. should we manage basins to be supplemented?
           1. at an MPG level—how do we consider the ratio of populations that are being supplemented?
           2. how does hatchery production relate to the viability curve?
    3. Need a "crosswalk" between EDT and APSD metrics
       - a. How do effectiveness numbers fit into VSP parameters?
       - b. How does EDT set priorities?
         - i. Needs to be more transparent
       - c. Need % change in smolt capacity
    4. How should diversity criteria be reconciled?
       - a. Use examples of TRT metrics not accounted for in EDT
         - i. Proportion of hatchery fish
         - ii. Kelt program
       - b. Analysis output needs to be broken down to include MSAs or populations
    5. Form workgroups to do writing for these tasks

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- I. Business
  - a. TRT meeting dates
    - i. April 25-26 in Boise
    - ii. May 23-25 in John day (Hancock field station?)
    - iii. June 29-30 in Portland
    - iv. July 25-26 in Boise
    - v. August 29-31 in Portland
    - vi. September 27-28 in Boise
    - vii. November 1-3 at Hanford
    - viii. December 6-8 in Portland
- II. Abundance & Productivity (A&P) and Spatial Structure & Diversity (SS&D)
  - a. Get Mike's morning notes
  - b. SS&D notes
    - i. Categorical vs. numerical scoring
      1. Numbers aren't necessary
         - a. ESU or MPG criteria don't use sums and averages

b. Simply viable or not viable
2. asymmetrical weighting produces exceptions
3. Use a categorical matrix (see handout) for A&P and SS&D
    a. Levels of risk (very low <1%; low <5%; moderate <25%; high >25%)
    b. Assumptions of matrix
        i. If the population is in high risk AP or SSD then automatic not viable
        ii. 5% risk criteria (policy decision)
        iii. SSD criteria integrated into a 4-category system
        iv. Uncertainty and error are accounted for
    c. Can low SSD risk mediate a higher risk AP situation?
        i. Consider the definition of "moderate" risk (broad range 6%-25% risk)
        ii. Some aspects of SSD could ameliorate AP concerns, while others would be less helpful
            1. Workgroup could focus on weighting metrics to address this issue
4. Incorporating error and uncertainty in AP and SSD
    a. Show error bars around point estimates on the AP viability curve
    b. More difficult to account for uncertainty in SSD risk
        i. Use a scalar – less quantitative
        ii. Integrate confidence across SSD metrics

c. A&P notes
    i. Recruit per spawner (hockey-stick model) viability curves
        1. Utilized Eric Tinus' table for age structure (from SVR files and spawning ground survey results)
        2. Derived autocorrelation and variance from poptools curve fits
        3. sensitive to abundance at low productivity
        4. large error range, even with many years of data
    ii. Lambda curves
        1. no autocorrelation incorporated
        2. 4-year running sum
    iii. SAR data curves
        1. various SAR estimates exist (Williams, Petrosky, CSS studies)
            a. averaged estimates
            b. assumes survival past lower granite dam is proportional
        2. more difficult to get SARs for Upper C.
            a. used Chiwawa data
            b. found a regression coefficient between lower granite and chiwawa data to fill in missing years of upper C. data (McNary to spawning grounds)
        3. Other SAR concerns
            a. Hatchery fish have a different SAR than wild fish
            b. Pre 1978 data have problems (dams, increased hatchery production)—so 1978 brood year data and later were used
            c. can we use smolt/adult rate estimates to improve our knowledge of marine survival?
        4. Benefits of using a SAR type analysis
            a. Allows us to deal with year to year uncertainty
            b. Gives us a better idea of where populations are at
            c. Allows more flexibility to use an additional data type
        5. Lay out pros and cons of each method with info about how to measure against a curve
    iv. Making a library of curves

1. MPG and Upper C. curves
   a. How do we get estimates of variation and autocorrelation?
      i. Use ESU estimate if only 1 population in the MPG?
      ii. Average by life-history type?
      iii. Decision: use average variance & auto across ESU
   v. Should hatchery fish be counted for AP?
      1. if we know hatchery effectiveness
      2. demonstration of intrinsic productivity
      3. how would this change the viability curves?
      4. measure productivity as natural recruits
   vi. Short-term projects
      1. generate ESU specific curves (average variance, auto, age)
      2. Discuss proof of meeting AP curves
         a. Hatchery effectiveness studies needed for a less conservative approach
         b. Should abundance ignore subsidized spawners?
            i. How would this affect running sums?
   d. SS&D workgroup
      i. See handout (Hassemer, McClure, Baldwin
         1. Attempt to improve wording of goal A
            a. Should encompass gene flow, catastrophic extirpation rate, etc.
         2. Workgroup tasks
            a. Move metric "B.2.b" to "A.1.c"
            b. Get goal A "fixed up"
               i. How do the three metrics relate to one another?
            c. If every score is a moderate, should this raise the risk level?

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I. How can the TRT be helpful to the Washington (and other) planners?
   a. Finish viability criteria – fine tuning
   b. Assemble data and work through example populations
   c. Use populations (ESUs) that cover a wide variety of geographic & anthropogenic issues
II. Objectives
   a. Through examples…
      i. Clarify to planners what info they need to apply metrics
      ii. Test viability criteria across a geographic range (ESU or MPG)
      iii. Cover an array of species
   b. Test run viability criteria with examples across:
      i. Representative range of populations
      ii. Lots of info vs. little info
      iii. Large, complex vs. small
      iv. Hatchery influence vs. little or no hatchery influence
      v. Degraded vs. pristine habitat
      vi. High out of basin effects
   c. View of how far you need to go – status of recovery priorities
      i. Limiting factors analysis
   d. Provide timely & applicable tools, as well as feedback/insight to active recovery planners
III. Timeline
   a. Setup
      i. Choose examples
         1. to help WA and other planners
         2. to be used in limiting factors analysis

3. that cover a wide range
4. stagger and/or complete tasks with different levels of detail for different ESUs?
   ii. Information and analysis
      1. AP workgroup define data requirements for a status review (next two weeks)
      2. Survey/request data
      3. do Upper C. analysis (review U.C. information vs. objectives)
      4. next TRT meeting—review data available for AP and discuss data needs for SSD

	ESU info	Limiting factors	Status Review
Upper C. Sp. Chinook	TRT review info on FTP site all 3 pops Okanogan as example of extirpated pops	Wenatchee? Check with Casey (1st priority)	Upper Columbia Sp. Chinook (1st priority)
Snake R. sp/sum Chinook	Upper - many challenges Mid. - low opportunity / local hatchery G.R. - mixed tribs condition S.F. - mixed habitat / hatchery influence Tuc/Aso - hydro impact / multiple challenges	Marsh, Minam, Catherine (2nd priority)	Grande Ronde (2nd priority)
Middle C. Sthd.	Yakima, WW/Uma, J.D., Lower	Umatilla (staggered, lower priority)	WW / Umatilla (3rd priority)
Fall Chinook			Fall Chinook (4th priority)

   iii. Workshop with planners
      1. Joint effort
         a. Train for status review
         b. Gives the TRT feedback on utility of criteria
      2. Review planner data
         a. Discuss and identify holes
            i. Fill holes, fix problems
         b. Planners update their status review
         c. TRT update their criteria

   b. Finalize viability draft report
      i. Factors criteria (details)
      ii. Examples (status assessment)
   c. Limiting factors framework
      i. Examples / limiting factors / assessment (prior to June)
IV. Draft tdc document (ESU/MPG)
   a. TRT members review the ESU/MPG document and send back to Tom with comments (test MPG criteria) by the end of next week.
   b. Also review population definitions
   c. Develop rational for criteria on proportion of life-history patterns
      i. Interpretation on distribution of proportion by size class (substitute down but not up)
V. "Treatment of Extirpated Populations" document
   a. Population structure for fall Chinook
      i. Revisit pop ID
         1. ensure decision was consistent with the data
         2. bring this info to the next meeting
      ii. must re-create historic structure to meet viability?
      iii. Conference call on extirpated pops and ESU viability (fall Ch.)

      b. Restoring an extirpated population
- i. Where a genetic lineage exists, try to maintain it
- ii. Bring a population to redevelop area and become viable
- iii. Need input from geneticist
    1. how long does it take a re-introduced line to become its own population? (ie. How many generations?)
    2. example: 50 years of scrambling in the Upper C.
- iv. Need a specific set of conditions for a re-introduction to become a distinct population
- v. Hatchery production hampers development of the population

      c. Conference call on extirpated populations
- i. Beginning of week after next (week of Feb. 1st)

VI.   Summary of timeline and priorities

      a. Status reviews
- i. Upper C., GR/Marsh, Midd. C., Fall Chinook (in that order)

      b. TRT develop framework for limiting factors analysis (next meeting, Feb.)
- i. See ISAB review – small group meet to pull together past tools

      c. Limiting factors
- i. Upper C., GR/Marsh, Midd. C., Fall Chinook (in that order)

      d. Conference Call on SSD early next week (week of January 24th)

      e. A&P group – consider a different matrix for maintenance? (after Feb. meeting)