Interior Columbia TRT Meeting
November 15-16, 2006
Boise, ID

Members in attendance: Michelle McClure, Rich Carmichael, Pete Hassemer, Fred Utter, Casey Baldwin, Phil Howell, Charley Petrosky, Howard Schaller
Non-members in attendance: Damon Holzer, Don Matheson, Chris Jordan, Darcy Pickard, Claire McGrath

1. Future meetings
    a. December 14-15 in Portland
    b. January 24-25 in Boise
    c. February 21-23 in Portland (12:00 start time)
    d. March 21-22 in Boise
    e. April 18-20 in Portland (12:00 start time)
    f. May 16-17 in Boise
    g. June 20-22 in Portland (12:00 start time)
2. CESMEP Modeling
    a. Making population-scale viability assessments (AP, SSD) for SRSS using a model
    b. Need to better understand construction of SSD metrics
        i. Process of scoring risk-level
        ii. Verify data needs/sources
        iii. What is the relative uncertainty of data: rule set interpretation
            1. is the uncertainty a result of the actual monitoring or application of rules?
            2. lump benchmark and current data together, separate interpretation of rules
        iv. Misclassification rates (ideal and poor scenarios)
            1. probability of rating a particular metric at each risk level (ex. 70% high, 10% mod, 10% low, 10% very low)
        v. What is the expected temporal scale for changes in the metrics?
            1. natural variability (fairly constant, decadal oscillation, etc.)
        vi. What is the expected spatial pattern? (population, MPG, ESU)
            1. are metrics correlated within MPG, ESU?
    c. Fill in SSD misclassification rate table (Table 1)
        i. Metric A.1.c. averaged over a few generations. Add “smoothing” clarification?
        ii. Metric B.1.b.
            1. TRT to improve wording
                a. Overlaps life-history
        iii. Fill in the table assuming the true answer for the metrics is low risk, then come up with likely distribution for VL, M, and H
            1. Rule for shifting true answer to high risk, etc.
        iv. Metric B.2.a. consider changing “strays” to “spawners” (also make this change within current status assessments)

Table 1. CESMEP modeling SSD misclassification rate table. Uncertainty rating distributions are based on a low-risk rating.

Factor	Primary data need	Primary data source	Ancillary data	Spatial Scale		Temporal Scale		Type of uncertainty	Magnitude of Uncertainty ideal/(average poor)			
				Measurement	Evaluation	Measurement	Evaluation	rule:data	v. low risk	low risk	mod risk	high risk
									misclassification rate (status quo) good data / poor data			
									v. low risk	low risk	mod risk	high risk
									2	1	0	-1
A.1.a. Number and spatial arrangement of spawning areas	Major and minor Spawning Areas defined	GIS maps of M/mSA	(primary data)current M/mSA occupancy	Population	Population	Annual	5yr	Uncertainty in interpreting historical information to generate initial mapping. Monitoring data uncertainty. 1:8	0.05/0.05	0.9/0.75	0.05/0.15	0/0.05
A.1.b. Spatial extent or range of population	Spawner distribution by M/mSA relative to historic	Spawner survey by M/mSA	TRT Population group designation	M/mSA	Population	Annual (mon not maps)	Generation	Monitoring data (based on historic distribution) may cause uncertainty. Misclassification due to interpretation unlikely. 1:10	0.05/0.125	0.9/0.75	0.05/0.125	0/0.0
A.1.c. Increase or decrease in gaps or continuities between spawning aggregates	Spawner distribution by M/mSA relative to historic	Spawner survey by M/mSA		w/in M/mSA	Population	Annual	Generation	Data uncertainty is primary. Primarily due to historic distribution map. Misclassification due to interpretation unlikely 1:8	0.01/0.05	0.85/0.6	0.12/0.3	0.02/0.05
B.1.a. Major life history strategies	Major lifehistory strategies (run timing, spawning	Spawn timing	Historic lifehistory strategy diversity	Population	Population	generation	Generation - Decade	monitoring, decision criteria allow for some subjectivity 1:4	0.01/0.01	0.75/0.7	0.24/0.27	0.0/0.02
B.1.b. Phenotypic variation	Reduction in variability of traits, shift in mean value of trait, loss of traits.	Size at age	Historic phenotypic diversity	Population	Population	Annual	Generation - Decade	Potential for lots of differences of opinion for defining this factor, monitoring error as well 1:8 more data intensive than B.1.a,	0.01/0.05	0.85/0.65	0.13/0.25	0.01/0.05
B.1.c. Genetic variation	Genetic analysis encompassing within and between population variation	Standard neutral genetic marker	TRT Population group designation	sub-Population	Population - ESU	Annual (to form baseline, ultimately at the generation scale)	Generation - Decade	dependent on monitoring data, must capture spatial/temporal information, how representative is the sample? We assume the population is unique. Rule set: it depends -- 1:4	0.05/0.05	0.8/0.6	0.14/0.25	0.01/0.10
B.2.a. Spawner composition	Proportion of natural spawners that are unnatural out-of ESU	Adult tags or marks		Population	Population	Annual	Generation	Decision criteria clear, hard to misinterpret. Monitoring data source of uncertainty - 1:20	0.025/0.35	0.95/0.15	0.025/0.15	0/0.35
B.2.b. Spawner composition	natural spawners that are unnatural out-of MPG	Adult tags or marks		MPG - Population	Population	Annual	Generation	Decision criteria clear, hard to misinterpret. Monitoring data source of uncertainty- 1:20	0.025/0.35	0.95/0.15	0.025/0.15	0/0.35
B.2.c. Spawner composition	hatchery origin natural spawners derived from a within MPG	Adult tags or marks		MPG - Population	Population	Annual	Generation	Decision criteria clear, hard to misinterpret. Monitoring data source of uncertainty- 1:20	0.025/0.35	0.95/0.15	0.025/0.15	0/0.35
B.2.d. Spawner composition	hatchery origin natural spawners derived from a	Adult tags or marks		Population	Population	Annual	Generation	Decision criteria clear, hard to misinterpret. Monitoring data source of uncertainty. 1:20	0.025/0.35	0.95/0.15	0.025/0.15	0/0.35
B.2.e. Spawner composition	hatchery origin natural spawners derived from a local (within	Adult tags or marks		Population	Population	Annual	Generation	Decision criteria clear, hard to misinterpret. Monitoring data source of uncertainty. 1:10 (based on the def of BNP)	0.025/0.325	0.95/0.16	0.025/0.19	0/0.325
B.3. Maintain occupancy in a natural variety of available habitat	Distribution of population across habitat types	Spawning distribution	EPA Level IV Ecoregions	Reach	Population	Annual	Generation	flow chart (Fig 4) - still some subjectivity. 1:20 historic distribution map	0.01/0.11	0.9/0.8	0.08/0.08	0.01/0.01
B.4. Maintain integrity of natural systems	Change in natural processes or impacts	Mortality (specific fraction of population - selection		Population	Population	Annual	Decadal	Decision criteria difficult due to interpreting action impact on natural selection. 1:4	0.15/0.2	0.75/0.6	0.08/0.15	0.02/0.05

3. Treatment of extirpated populations in the status assessment atlas
    a. Include size and complexity category, MSA map, basin stats table
    b. Include language about what parts of the population are currently blocked
    c. No need for "Current Abundance and Productivity" section (consider "Historic Abundance and Productivity"
        i. Include table of historic abundance and productivity (describe current productivity and abundance goals)
    d. Describe reintroduction of extirpated areas and how this relates to recovery
        i. Discuss how such an effort will affect viability (of the MPG, ESU)
    e. Include MSA bar chart
    f. Include ecoregion map and table
    g. No need to integration graphic
    h. For phenotypic and genotypic metrics, describe what would be required for reintroduction (simple language)
    i. Life history metric – include historic picture of characteristics
    j. Include brief description of ongoing plans for reintroduction
    k. Crab Creek
4. Finalization of Status Assessments
    a. Selectivity metrics – three moderate ratings
        i. Harvest and hydro – write paper giving a rating for all ESUs – apply to populations
        ii. Hatchery and habitat – write 2 page guideline
            1. examples of selectivity (hatchery practices or habitat impairments
        iii. Hydro
            1. size selectivity
                a. looked at Little Goose and fish (Zabel) into bypass systems (no relationship found at granite, but some at other projects). Earlier in-river fish did better, but better to be transported late.
                b. Size selective predation in the reservoirs (fall ch. especially impacted)
                c. Note: in viability document, fix flow chart error
            2. Opportunity exists for affecting >25% of the population. Possible to impact a non-negligible component. Possible SRSS rating at moderate risk, recognize some populations may be at high risk.
            3. Low, Moderate and High risk scenarios (Figure 1)
                a. Low Strength of Selection: Those situations in which the trait has relatively low heritability, the proportion of the population affected is low, and the mortality (or change in fecundity) as a result of the selection is low
                b. Moderate Strength of Selection: Those situations in which the proportion of population affected and the mortality (or change in fecundity) as a result of the selection are mixed in their magnitude (low and high)

c. High Strength of Selection: Those situations in which the trait has relatively high heritability, more than a small proportion of the population is affected, and mortality is significant

Figure 1. Modified selectivity metric flow chart example.

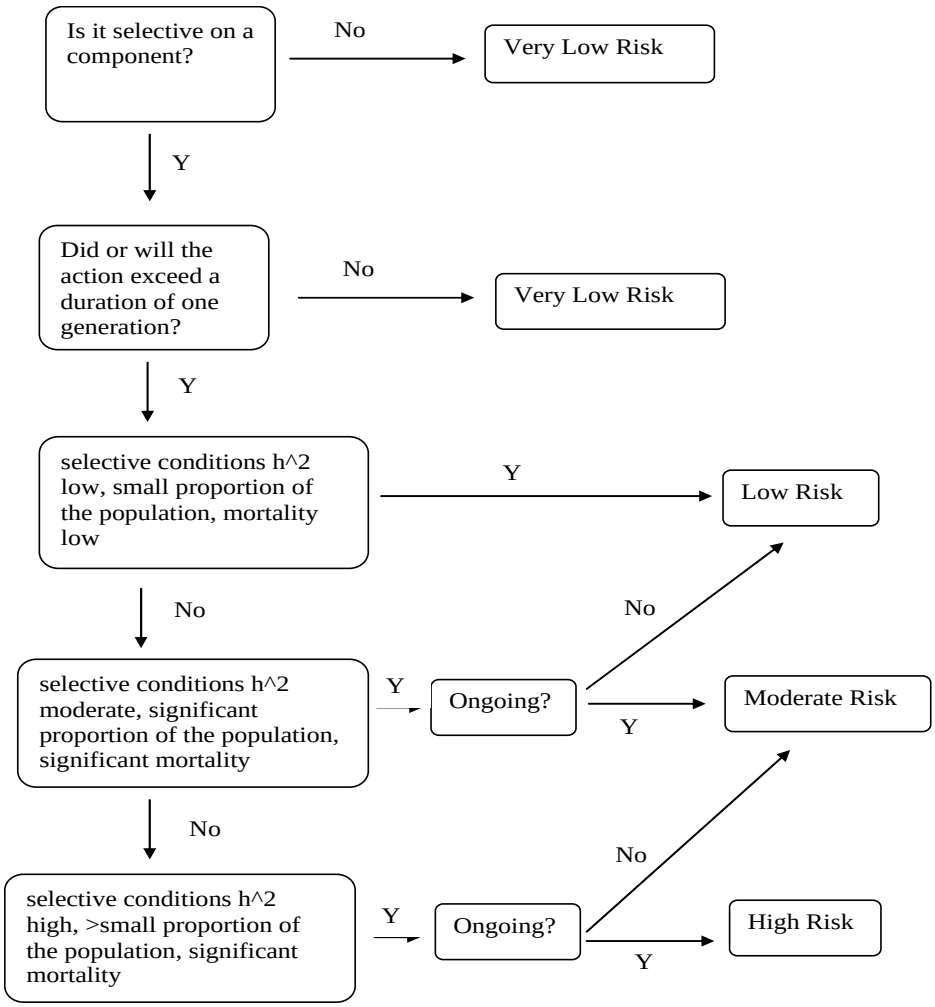

Table 2. Strength of selection broken into three components.

% of pop	mortality effect	heritability	strength of selection
H	H	H	H
H	H	L	M
H	M	H	H
H	M	L	M
H	L	H	M
H	L	L	L
L	L	H	M
L	L	L	L
L	M	H	M
L	M	L	L
L	H	H	M
L	H	L	L
M	L	H	M
M	L	L	L
M	M	H	H
M	M	L	M
M	H	H	H
M	H	L	M

b. ESU status and roll-up
c. Viability curves
    i. delimiting procedure for productivity metric
        1. Meet with Rich and Howard on Nov. 27th at 10:00 (schedule GoTo meeting & conference line)
            a. Combine with RFT meeting
    ii. RFT considerations
        1. Currently the RFT used to generate the viability curves is set at 50--production is set to zero in the model when the number of spawners in that year is less than 50
        2. the viability document currently focuses on rationale for the QET only. Rationale for the RFT is that it is precautionary.
        3. consider keeping QET at 50 along with RFTs of 2 and 10
            a. summarize analysis (escapement vs adj. R/S) by population size category
        4. consider using additional models to average risk (fuzzy logic approach?)
        5. consider a variable RFT approach, or building a varied RFT within the model
        6. add back in R/S values from escapements <5 and re-summarize
        7. look at adjacent years to very low escapements (misallocation due to age structure) – Charlie's idea
        8. Tom and Don to circulate summaries early next week

5. COMPASS modeling
    a. Key issues: delayed mortality, d-values for transport fish, direct mortality (mechanisms) in the river
    b. Get Hassiker/Boyes versions by the end of this month
    c. 7 different hydro scenarios, 14 combinations (Howard/Charlie to work on getting outputs for alternative scenarios)
        i. three ocean scenarios—historical, bad, recent 25 years
        ii. 100% survival scenario
        iii. egg/smolt survival to greatest observed scenarios (around 11%)
            1. use pit-tag and spawner data to get density related values
        iv. should consider S3 influenced by river conditions (i.e. no effect from water travel time)