

## **Update on regional science advisory (PSARC) meetings.**

### **Salmon Subcommittee review – June 13-14, 2007**

**Chair – Kim Hyatt**

Two working papers were reviewed.

1. Conservation Units for Pacific salmon under the Wild Salmon Policy. Authors – Blair Holtby and Kristine A. Ciruna.
  2. Comparison of the fishery and conservation performance of fixed- and abundance-based exploitation regimes for coho salmon in southern British Columbia. Authors – Josh Korman and Arlene Tompkins.
- Paper #1 presented a methodology for identifying Pacific salmon Conservation Units (CUs). This was the first significant science peer review required for implementing the WSP.
  - The methodology has its origins in the conservation literature that characterizes salmon diversity according to ecological, life history and genetic traits. The methodology was well supported by meeting participants and accepted as the scientific basis for identifying CUs.
  - Significant issues identified during the review include:
    - The need for consistency between CUs and COSEWIC Designatable Units (DUs). The working paper acknowledged that multiple CUs could exist within a single species DU but conceptually there is no inconsistency between what constitutes a CU and a species level DU;
    - The need to ensure transparency/repeatability of the “model” used to identify CUs;
    - The recognition that salmon management operates at finer or larger scales than CUs;
    - The interest by some participants to specifically incorporate ATEK into the methodology. For the latter, the author noted that extensive consultation with First Nations has occurred and is ongoing. Beyond that, explicitly building ATEK into the methodology would be a large task.
  - Next steps include revisions to the paper mainly to address clarity issues and the provision of illustrative maps of CUs.
  - Lists of CUs based on the methodology will be produced and made publicly available in the near future. The total number of CUs will likely be about 450 and should remain fairly stable as WSP implementation goes forward.

- The next major science review could occur as early as this fall to review the methodology for identifying WSP benchmarks.
- Paper #2 presented a simulation model for southern BC coho (Strait of Georgia and interior Fraser) to evaluate the performance of alternative harvest policies. The model is viewed as a tool to guide the development of the PST Southern Coho Management Plan.
- Reviewers and meeting participants supported the concept of the model. The working paper was accepted with revisions to include several technical modifications and data treatments.

### **Recovery Potential Assessment (RPA) review. June 19-20, 2007**

#### **Chair – Al Cass**

Three working papers were reviewed.

1. Recovery potential analysis for Okanagan Chinook salmon. Authors – Carla Davis, Howie Wright, Tom Brown, Brent Phillips, Rishi Sharma, and Chuck Parken.
2. Recovery potential assessment for Cultus pygmy sculpin. Author – Brian Harvey.
3. Recovery potential assessment for speckled dace. Author – Brian Harvey.

The common element in the RPAs is the implication for habitat management and poor data quality to assess status, threats and mitigation alternatives.

The Province has expressed concern about the RPA process and chose not to participate at the last minute. This policy issue should be resolved given their habitat mandate and expertise in non-salmon freshwater species.

The concept of “recovery” as specified in SARA for species like Cultus pygmy sculpin and speckled dace was discussed and difficult to interpret. These species were designated by COSEWIC as threatened and endangered respectively because of their isolation in Canada and not due to low abundances or declining population trajectories.

#### Okanagan Chinook (COSEWIC designated as “Threatened” in April 2006):

- Discussion focused on the resolution of 3 alternative hypotheses concerning the distinctness of Okanagan Chinook from southern populations in the US: 1) demographically isolated and genetically unique; 2) demographically isolated and not genetically unique; and 3) not demographically isolated nor genetically unique.

- There was consensus among participants that hypotheses #3 was the most plausible and that the existing Okanagan population is demographically coupled and genetically similar to the US summer/fall Chinook population. This has significant implications about what it is that would be recovered under SARA.
- The Population Viability Analysis (PVA) in the working paper was approved. Participants recommended that additional parameters be considered in the PVA to account for straying rates given the evidence for demographic and genetic links to southern US populations.
- The PVA indicated that at the current abundance (<50 Chinook), extirpation of the population is inevitable even in the absence of fishing without substantial hatchery supplementation.
- Human threats to Chinook habitat include: water withdrawals, construction and operation of dams (for power generation or water diversion), channel modification, and introduction of non-native fish species. The most significant human threats to survival include juvenile mortality related to dams (9 on the Columbia R).

Cultus pygmy sculpin (listed as “Threatened” under SARA June 2003):

- A recovery strategy is completed and should be posted on the public registry soon.
- The reviewers supported the assessment in the working paper but acknowledged that the absence of basic data on life history, habitat requirements, reproduction and taxonomy limits the assessment of status, threats and mitigation alternatives prescribed under SARA. There are no trend data to assess status except for incidental and spotty incidental catch data from sockeye surveys in the lake.
- The distribution of pygmy sculpin is poorly understood and therefore the specific importance of habitat (critical habitat) is not known.
- One reviewer speculated that ecological changes (i.e. future potential impacts from aquatic invasives and human demographics) are likely to increase pressure on sculpin but agreed that there presently are no known threats or evidence presented in the paper of a population decline.

Speckled dace (designated by COSEWIC as endangered April 2006).

- Widely distributed throughout the western U.S with a northern range limit in the Kettle-Grandy River systems in southern BC. The Canadian population is isolated from the US population at Cascade Falls.
- There is no data on spawning distribution and other key life history parameters (age/growth). The only statement regarding critical habitat relates to the likely importance of ripple habitat and flow.

- There is some evidence within the species for spawning aggregations and nest building that has implications for “residence requirement” under SARA but nothing definitive can be inferred from data. Abundance estimate presented in the paper (11,000-23,000 individuals) are crude and thought by one reviewer to be an underestimate.
- There are no quantitative estimates of status or impacts of human threats. Potential human threats include water withdrawal, hydroelectric development and watershed alteration by logging and in particular salvage logging if pine beetle infestation increases in the area.
- An assessment (DFO 2006) of the proposed Cascade Heritage Hydroelectric Project estimated that less than 2% of speckled dace habitat would be affected by the creation of a headpond for the dam, mainly by reduction of productive capacity due to inundation of riffle areas.