



**Independent Scientific Review Panel**

for the Northwest Power & Conservation Council  
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**MEMORANDUM**

April 16, 2004

**TO:** Doug Marker, Fish and Wildlife Division Director, Northwest Power and Conservation Council

**FROM:** Rick Williams, ISRP Chair

**SUBJECT:** Comments on Flathead and Kootenai Subbasin Plan Presentations (ISRP 2004-7)

On March 24, 2004, the ISRP and ISAB met with the Flathead and Kootenai subbasin planners in Kalispell, Montana.<sup>1</sup> This meeting provided an opportunity for the subbasin planners to present their planning process and results to aid the ISRP and ISAB in its review of the Flathead and Kootenai subbasin plans this summer. Originally, the Flathead and Kootenai plans were scheduled for submittal in advance of the meeting, but the planners decided it was not tractable to deliver plans before the May 28<sup>th</sup> deadline. Despite the lack of a finished product, the planners were confident their planning effort was substantially complete and a presentation in advance of final submittal would meet the needs of the scientific review this summer.

The ISRP provides this memo to capture some of the key impressions and issues to aid the planners in their final efforts.

**Summary Comments**

The ISRP/ISAB/PRG reviewers were favorably impressed with the presentation by the Flathead and Kootenai subbasin planners on the development and preliminary status of the Flathead and Kootenai subbasin plans. If the final subbasin plans are consistent with the presentation and adequately address our review comments, they are likely to be valuable planning tools for the region and for the Flathead and Kootenai subbasins.

Based on the presentation, the subbasin plans appear likely to be comprehensive planning documents that coordinate resource management planning among two tribes (Kootenai and Salish Kootenai), two state fish and game departments (Idaho and Montana), and two countries (US and Canada). During the presentation, planners and technical personnel from these constituencies appeared to work well together, to be familiar with each other's concerns and data, and to work well with the contracted facilitator, David Rockwell. This present ease and

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<sup>1</sup> Attendees included: Planners: Sue Ireland (Kootenai Tribe), Brian Marotz (MDFWP), Lynn DuCharme (Salish Kootenai Tribes), David Rockwell (contractor), Mike Panian (BC Ministry of Sustainable Resource Management), and Wade Fredenberg (USFWS); ISRP/ISAB/PRG: Chuck Coutant, Jack Griffith, Bill Liss, Bill Smoker, Dick Whitney, Dan Goodman, Eric Loudenslager, Pete Bisson, Nancy Huntly, Brian Riddell, Lyman McDonald, Susan Hanna, John Epifanio, Rick Williams; Erik Merrill (ISRP/ISAB Coordinator); Council Staff and Others: Kerry Berg, Tom Dayley, John Ogan, Lynn Palensky; and Mark Reller (BPA)

coordination among the planners belies the difficulty they identified in initially establishing subbasin and province level working groups that were supported administratively by tribal, state, and federal agencies.

The presentation of the Flathead and Kootenai team provided a good model for other presentations this summer. They described a clear logic path that drove their planning process, starting with the public and technical input used to generate the plans. They then briefed the reviewers on the analytical tools used, and specified how they customized the tools for the unique conditions and species in their subbasins. Finally, they selected a few key examples that showed their logic path, demonstrating the use of an assessment to identify limiting factors, to create working hypotheses, to develop objectives, and to select strategies. At each of these steps, they described the process they used for collecting and analyzing data, and making decisions.

Throughout the presentation, the Flathead and Kootenai basins were used as examples somewhat interchangeably. As a presentation tool, this was effective. However for other presenters this summer who present on multiple subbasin plans, it might be useful to highlight important differences between the basins, especially where one represents a good situation and the other a poor situation for a particular species (leading to recommended fixes based on the contrast). Presenters should use this presentation approach only if it serves a useful purpose.

Reviewers asked the Flathead and Kootenai subbasin planners if they found the assessment process useful. The planners responded that the process was most informative. Various agencies brought together their data and expertise. This collaborative sharing of data and the subsequent creation of an electronic library was judged to be of great value by the subbasin planners. They found that the results reflected their previous understandings and provided larger insights that were not apparent from the single data sets.

Additionally, the Flathead and Kootenai subbasin planning effort resulted in increased coordination with Canada. The subbasin planning effort provided assessment information to Canada, although Canada will develop its own management plan. The overall result should produce better coordination of long-term management plans between the countries.

## **Specific comments**

### ***Electronic Nature of Documents***

Reviewers were shown (via Power Point), an “in-progress” version of the Assessment, Inventory, and Management Plan. The Subbasin Plan and all its components are intended to be electronically linked, allowing readers to move easily throughout the document and to step down through links to various tables and source data that underpin the Subbasin Plan’s major findings and management recommendations. The reviewers believe that this approach is very useful, logical, and transparent for the current planning process and that it will continue to provide services into the future. A number of hard copy sample sections were also temporarily made available for review purposes during the meeting. On quick examination, the formatting and appearance of the hard-copy assessment was very good.

## *The Assessment*

### *Aquatic Focal Species and Assessment Tools (QHA, LQHA)*

Based on the presentation and discussion, the Flathead and Kootenai subbasin planners' approach to selecting aquatic focal species appears justified. They selected as focal species ESA-listed fish for which they have good data, for example bull trout. The reviewers and planners discussed the difficulties associated with M&E of species that are not abundant and the possible advisability of including some species that are more abundant than those chosen. The planners stated that they also considered using the very abundant and non-listed mountain whitefish as a focal species because of its ecological overlap with bull trout and other coldwater aquatic species, but found the data inadequate for that role. Instead, they are looking at whitefish distribution and abundance as possible indicators of river conditions.

Focal fish species included salmonids, burbot, and sturgeon. QHA was used as the assessment tool for the salmonids, but not for burbot and sturgeon. Planners chose not to use EDT, primarily because it was not designed for resident fish. Reviewers suggested that planners incorporate a paragraph explaining why they did not use EDT and justifying their selection of QHA as an assessment tool.

Planners modified QHA and adapted it for use in the Flathead and Kootenai subbasins. This was accomplished by convening a meeting in Whitefish, Montana with 40 aquatic specialists to score various aquatic habitat attributes. The scores were based on current aquatic condition without regard to whether the disturbance was anthropogenic or not. Mobrand Biometrics chose the primary QHA attributes, adapted from EDT. Additional attributes identified by the Flathead and Kootenai subbasin planners included disease status, species interactions (competition, predation, introgression), and genetics data. The genetics score focused on the threats of non-native trout to westslope cutthroat trout.

With respect to the table of QHA restoration scores, reviewers suggested that the relationship between the costs of an action and its potential benefits is of primary importance. The more the assessment can generate information and analysis on the cost/benefit relationship, the better the ability to justify selection of various strategies.

### *Wildlife Focal Species, Assessment Tools (TBA, IBIS), and associated M&E*

Planners used a biome approach informed by IBIS to assess wildlife. Specifically, they developed the Terrestrial Biome Assessment (TBA) tool to get to a finer level of analysis than that provided by IBIS, which is limited to qualitative measurements. The Terrestrial Biome Assessment includes both quantitative and qualitative data fields. The presentation on the Terrestrial Biome Assessment included a description of how uncertainties about data quality were identified and managed. These include GIS data on road density. The reviewers appreciated this transparency.

For wildlife monitoring, the planners will rely on habitat typing and shifts in habitat, in addition to observational monitoring. The biome approach has strengths, but also weaknesses, and reviewers questioned how biologists would get the data they needed. The reviewers emphasized the need to directly monitor some focal species in addition to relying on habitat measures. For example, the planners are advised to consider the recent work on estimation of site occupancy

rates by MacKenzie et al. (2002, 2003) in development of procedures for direct long term monitoring of both terrestrial and aquatic species. Spatially extensive, but simple, monitoring of presence-absence of more species might provide a robust and economical alternative, or a useful supplement, to intensive monitoring of a few (e.g., Manley et al. 2004).

#### *Integration of Aquatic and Terrestrial*

As emphasized by the USFWS, the planners intend to include maps based on GIS overlays of aquatic and terrestrial analyses in their subbasin plans to help identify areas and strategies that have the potential for the greatest benefits to multiple species. The maps were not completed at the time of the presentation, but reviewers look forward to seeing them in the final subbasin plan.

#### *Limiting factors*

The presentation did an excellent job of identifying limiting factors from the assessment data, but the planners may want to more explicitly identify the interrelationships between the limiting factors. Are any of the limiting factors correlated? The planners might include and explore implications of a box diagram of hypothesized or known linkages between limiting factors; e.g., the hydrograph may be the key limiting factor that affects other limiting factors and so remediation of those others might depend on directly modifying the hydrograph.

The planners should also describe the priorities of limiting factors, as this may influence decisions on priorities of actions and sites as the Plan is implemented. The plan should lay out a strategy for future analysis of potentially correlated limiting factors and other data. Such analyses would help guide priority of actions and would highlight needed M and E to resolve which actions are most likely to meet goals of removing the undesirable effects of current limiting factors that can be improved or eliminated.

Finally, reviewers suggested that planners clearly describe the prioritization process and results, as they have done with other elements of the plan. Initial prioritization decisions were illustrated in the presentation to the ISRP, but these priorities were at quite a coarse level. As planners move to implementing specific strategies and projects with limited funds and time, a finer-scale prioritization will be needed. Reviewers suggested that the Flathead-Kootenai planners present explicit lists of factors to be considered in these important implementation decisions and that they outline criteria by which those factors will be weighed and integrated. The team's thorough Assessment should provide much information with which to weigh strengths and weaknesses of various time sequences, spatial-geographic relationships, etc., of strategies or projects.

#### *White Sturgeon*

The ESA-listed white sturgeon have not reproduced in the Kootenai for some time. The subbasin plan needs to provide a detailed description of the limiting factors that need to be addressed to restore habitat for white sturgeon and provide conditions supporting reproduction. The burbot and white sturgeon teams are focused on improving ecosystem function. To inform this effort, planners may want to consider using an analogous reach approach (compare Kootenai habitats to habitats elsewhere that currently support abundant sturgeon populations). This approach would help the planners examine abundance of a particular species across a range of habitats, which would inform development of measurable objectives. Planners should present existing white

sturgeon monitoring plans in their M and E plan, and link these to the assessment and objectives of the plan.

### *Working Hypothesis*

The Working Hypothesis for salmonids flows directly out of QHA and gives an overview of the issues in the basin. The ISRP/ISAB made the suggestion to transparently describe the logic path or analytical process used to refine working hypotheses at the broad subbasin scale to limiting factors identification, and eventually strategies, at the finer 6<sup>th</sup> code HUC and stream scale.

### *Climate change*

Planners noted that the plans would include a narrative and qualitative discussion of climate change. Strategies are linked to water availability, which the reviewers thought was an important consideration. This link is especially important because of hydrosystem operations and consequent reservoir elevations and habitat. Reviewers noted the ongoing analysis of climate change from the University of Washington work group (Lettenmeier and associates; <http://depts.washington.edu/uwpcc/>). The planners were also aware of climate change work done for Glacier National Park. References and links to these regional efforts should be included in the plans.

### *Inventory of Past Activities*

The planners grouped projects by the limiting factor (habitat attribute) that the projects are intended to address, and progress-to-date in regard to each limiting factor was summarized. Reviewers found this assessment of ongoing projects helpful. Reviewers suggest that the planners edit the Inventory assessment table to include titles of projects under the habitat attribute (limiting factor) and, eventually, provide links to the projects (e.g., through CBFWA's database).

### *Management Plan*

#### *Objectives and Strategies*

The planners used QHA to help write objectives to address limiting factors, creating a good linkage and logic path throughout the document. This helped make clear how the assessment was used to develop the Plan. Reviewers suggest including in the objectives tables a text link back to assessment/limiting factors analysis, so that a reader could review this linkage of relevant information.

The objectives in the Management Plan were often habitat-oriented, rather than more quantitative and species-oriented, and addressed limiting factors, which is the basis of the Fish and Wildlife Program's multi-species, ecosystem approach. However, not apparent from the presentation was how the planners are going to use existing data on abundance and distribution of focal species across the subbasin to develop measurable targets for focal species and to help prioritize among areas for implementation of strategies to improve habitat and the overall state of the ecosystem. For three of the ESA-listed focal species (e.g., bull trout), target population numbers are included as objectives. The plan should articulate clear and measurable objectives for focal species, including wildlife species, but these objectives may sometimes be cast in terms of distribution, site-occupancy dynamics, or habitat association dynamics, when there is not a clear rationale or need for specific abundance targets. Where development of target numbers or,

for example, targets for site occupancy rates (MacKenzie et al. 2002, 2003), are not possible, planners should describe the limitations and uncertainties that preclude setting numerical objectives. Wherever planners can include targets for focal species, their proposed habitat objectives become more the strategies by which numerical targets can be achieved than the objectives they are presently portrayed as.

The role of hatchery fish was not highlighted in the planners' presentation, but the group discussed that the objectives and strategies for hatchery fish need to be included in the subbasin plans. Specifically, the plans should discuss the potential of hatchery fish to interact adversely with wild fish. This discussion should decrease the chance that objectives for harvest and production of hatchery fish conflict with objectives to recover endangered fish.

The objectives and strategies as presented do not provide the needed prioritization or sequencing of approaches to achieving the objectives. Reviewers asked whether the planners could develop a hierarchy of objectives, or in some other way make more clear how they will use information in their assessment to prioritize their approaches to solving problems and maintaining desired states in the Flathead and Kootenai region. Although not done yet, the planners stated that they intend to develop criteria for project selection as part of the subbasin plan, and that they intend to include considerations of opportunities and constraints that are posed by land ownership.

An ultimate goal of the management plan should be to prioritize the objectives and strategies, and to the extent possible, identify specific geographic areas and potential strategies at the subbasin or watershed scale that offer the opportunity to secure the greatest benefit at the least cost. Reviewers believe the subbasin planners in the Flathead and Kootenai subbasins have adequate data on habitat conditions and fish and wildlife distributions and abundances to make such judgments, in many cases.

#### *Monitoring and Evaluation*

As the subbasin plan is being finalized, reviewers note that measurable objectives need to be tied into an M and E plan. The M and E plan should incorporate ongoing monitoring plans (e.g., white sturgeon plans), where appropriate, and describe linkage and consistency with regional efforts such as the Pacific Northwest Aquatic Monitoring Partnership. Some existing monitoring efforts may provide a skeleton monitoring program, which could be enhanced, as needed, over the longer term, to provide additional elements of a subbasin or basin-scale monitoring program.

#### **Literature Cited**

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Manley, P.N., Zielinski, W.J., Schlesinger, M.D., and Mori, S.R. (2004) Evaluation of a multiple-species approach to monitoring species at the ecoregional scale. *Ecological Applications* 14: 296-310.