Northwest Power and Conservation Council

April 27, 2006

MEMORANDUM

TO: Fish and Wildlife Committee members

FROM: Council staff

SUBJECT: Status Report on Mainstem/Systemwide Project Review Process

Background

A Mainstem/Systemwide Review Team (MSRT) was formed to review proposals submitted for Bonneville Power Administration (Bonneville) funding for Fiscal Years (FY) 2007-2009. The Northwest Power and Conservation Council (Council) and the Columbia Basin Fish and Wildlife Authority (CBFWA) are providing staff to organize and facilitate the MSRT. The team consists of representatives from the Region's fish and wildlife managers, Bonneville, U.S. Army Corps of Engineers, Council staff, and other interested parties.

The MSRT first met on March 20, 2006 to develop the review process for proposals submitted in the Mainstem/Systemwide portion of the Council's Fish and Wildlife Program (Program) for FY 2007-2009. On March 31 the team adopted a review process, which identified steps that consisted of first identifying which Program priority each proposal would address and then applying a series of questions to assign a prioritization category for each proposal. The framework presented in Attachment 1 was used for developing review questions and as an organizational structure for explaining how the proposals in the Mainstem/Systemwide portion of the Program fit together.

The MSRT completed an initial review of all the proposals on April 18, 2006. The results are currently being reviewed by the group and will serve as a basis for the staff's development of recommendations for Council consideration. Each proposal was placed in one or more of the categories identified in the Program Priorities (Attachment 1) and then tied to the monitoring components or focal research themes provided with the Monitoring and Evaluation Questions and Research Critical Uncertainties (Attachment 2a and 2b). This categorization will help organize the recommendations and identify what Program level priorities are covered with the existing proposals.

851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204-1348
www.nwcouncil.org

Steve Crow
Executive Director

503-222-5161
800-452-5161
Fax: 503-820-2370

The MSRT review focused its review on management priority, as the ISRP will be relied upon to provide a review of the scientific soundness of the proposals. Project sponsors were notified of the time their projects were reviewed and asked to be available by phone in case questions arose concerning their proposals. The initial MSRT review functioned as a cursory sorting of proposals into prioritization categories and issues. Note that further review and analysis will be required to develop funding recommendations.

Summary of Initial MSRT Review

From April 13 through April 18, 2006, the MSRT conducted an initial review of a total of 161 proposals. The proposals were prioritized into four categories: 28 projects were placed in the Core Program category ($41M), 32 were placed in the High Priority category ($20M), 55 were placed in the Recommended Action category ($17M) and 21 were ranked as Do Not Fund ($2.9M). Ten on-the-ground projects were deemed better suited to a local review and were not prioritized by the MSRT ($2.7M). In addition, several groups of projects were not given a final ranking, pending a review in special categories (i.e., fish passage monitoring, database management, and fish and wildlife manager coordination). All but two multi-province projects were provided a review by the MSRT and incorporated in the Program framework.

Major Issues Identified in Initial MSRT Review

It is anticipated that the review group will reconvene to reconcile the outstanding issues over the course of the next several months. The major issues that will need special attention include:

1) Fish and wildlife manager coordination (5 proposals) -- The MSRT recommends that the project sponsors coordinate a strategy for providing an adequate and equitable level of support for coordination of the fish and wildlife manager's participation in the Fish and Wildlife Program. The issue is based on two components: 1) providing support for coordination on regional issues (i.e., for CBFWA, UCUT and CRITFC staff); and 2) providing travel and FTE support for the region's fish and wildlife managers to participate in Fish and Wildlife Program-related meetings and activities (i.e., this service is currently provided within the CBFWA contract). A follow-up meeting has been scheduled for May 2 to discuss this issue further and an update will be provided at the May Council meeting.

2) Database management (14 proposals) -- The MSRT anticipates a workshop or meeting involving the StreamNet steering committee and regional managers to define StreamNet and other database manager's role and functions for FY 2007-2009. A meeting will be scheduled to coincide with the NED workshop in May to begin discussion on this topic. Resolution will require CSMEP, PNAMP, NED, CBFWA and program managers' input. Currently there is not a requirement in BPA contracts to report data to StreamNet or other data management entities. It appears that there is substantial non-reporting of data to StreamNet or other data management entities by data collection projects funded by BPA. Input to the Council's M&E Framework could help define information needs for regional data management;

Other information-
Five PSMFC (StreamNet) proposals (some combination of these projects is Core Program)
Columbia Basin PIT-Tag Information System (ranked Core Program)

Interactive Biodiversity Information System (IBIS) (ranked Core Program for wildlife and some resident fish needs)
WA Interagency Committee proposal for hydrography database for WA (ranked high priority)
IDFG proposal for sub-basin planning support (ranked recommended action)
Two UW proposals should be reviewed in this database context, they are also included in other M&E categories
Three proposals were ranked Do Not Fund

3) Fish passage monitoring (7 proposals) -- The MSRT recommends that a work group be formed to develop the criteria for evaluating projects to serve mainstem fish passage monitoring data base and analysis functions for FY 2007-2009. The FPAC produced a memo articulating the fish and wildlife manager's needs (See February 16, 2006 memo). These functions are Core Program activities. The fish and wildlife managers identified three of the proposals as addressing their concerns. A meeting between the work group and the projects' sponsors will be organized for early May.

4) Lamprey (4 new proposals) -- The MSRT recommends that all four lamprey proposals should be reviewed as a group to determine the priorities for this funding cycle. The Lamprey Technical Work Group recently completed a document identifying critical uncertainties for lamprey which will assist in prioritizing these proposals. The review of these new lamprey proposals should include an understanding of all other lamprey proposals that are being recommended within the local provincial processes for context. All ongoing lamprey projects are being reviewed in the local provincial processes.

5) Bull Trout (5 proposals) -- There are several bull trout monitoring projects proposed that provide good coverage of the basin. Other bull trout monitoring projects are proposed in the local sub-basin processes. The MSRT would like to see a comprehensive picture of what bull trout monitoring is being funded throughout the basin to insure there is a common strategy for monitoring bull trout (consistent with the MSRT desire to see a coordinated plan for monitoring salmon and steelhead). Basic monitoring and evaluation for bull trout is a Core Program activity, but additional research activities in some of the bull trout projects are a lesser priority.

6) Sturgeon (6 proposals) -- The MSRT recommends that all six sturgeon proposals should be reviewed and prioritized as a group. The results of the current sturgeon workshop will help in prioritizing the sturgeon proposals. A comprehensive management plan for sturgeon is a High Priority need.

7) Ocean research (4 proposals) -- The MSRT agreed that the set of questions related to ocean survival and fish movement are Core Program issues. However, the question of which suite of projects should be funded to address those questions needs to be strategically developed to fit within the available budget and address key management questions with enough certainty to be useful for decision making. There has been a significant increase in proposed ocean research budgets. The region needs to determine how much monitoring we really need in the ocean and what tasks should be performed by which BPA-funded projects.

8) Several other major issues were highlighted, including research on reproductive success, landscape scale habitat analysis models for prioritizing and evaluating habitat actions, mussel monitoring and research, etc. The next step in reviewing these proposals will require the results of the ISRP review, further development of the Council's M&E Plan, and/or more clarification on BPA's expectations from the Biological Opinion remand process.

9) Multi-province and Sub-basin (10 proposals) -- The MSRT believes these projects would be more appropriately reviewed in local sub-basin/province review processes. The MSRT criteria developed for reviewing proposals does not support an adequate review of these on-the-ground activities. These projects should either be reviewed with other multi-province projects with separate criteria established for that review, or they would be more appropriately reviewed in sub-basin process. Two were multi-province projects #199706000, Focus Watershed Coordinator - Nez Perce Tribe, and #2007183000, Restoration of Historical Salmonid Habitat in Southwest Idaho. All other multi-province proposals were incorporated into the Program framework used for evaluating Mainstem/Systemwide projects. Eight others were sub-basin proposals that proposed on-the-ground actions that were wholly contained in an individual sub-basin or province.

Attachment 1. **Program priorities for compartments within the Mainstem and Systemwide proposals for BPA funding in FY 2007-2009.**

For this review cycle, the Council's 2000 Fish and Wildlife Program, 2003 Mainstem Amendment, 2005 Mainstem Sub-basin Plans, the 2004 NMFS FCRPS Biological Opinion (under remand) and Federal Action Agencies' Updated Proposed Action, the Interior Columbia River Technical Recovery Team's population designations and viability criteria, USFWS Recovery Plans, and other biological opinions will be used as the primary guidance documents. The Northwest Power and Conservation Council (NPCC) recently approved a Research Plan and is currently developing a monitoring and evaluation guidance document for selection of monitoring projects. Also available for reference is the 2005 ISRP Retrospective Report.

Coordination/Support

Program Support

- Support coordination of F&W managers for project selection/implementation, system operations and overall implementation of the Fish and Wildlife Program (including coordination of BPA's funding role and integration and coordination with other projects and processes that benefit Program implementation)
- Council support – ISRP & ISAB
- Coordination of monitoring and evaluation for habitat conditions and artificial production
- Coordination of Research
- Coordination of information dissemination

Regional Data Management

- Support mainstem passage monitoring
- Maintain habitat data relative to subbasin plans
- Maintain artificial production data
- Maintain harvest data
- Maintain data to support regional and provincial objectives
- Quality standards from the F&W Program:
  - -internet based distribution system
  - -reporting consistent with the F&W Program

Monitoring and Evaluation

- High level indicators
- Fish and wildlife population status, trends and survival, and
  - Hydro system status & trend
  - Hydro action effectiveness
  - Habitat (mainstem & tributary) status and trend
  - Habitat (mainstem & tributary) action effectiveness
  - Hatchery status and trend
  - Hatchery action effectiveness
  - Harvest status and trend
  - Harvest action effectiveness

  - Estuary and Ocean status and trend
  - Estuary action effectiveness
  - Predation:
    -Predator population census
    -Predator control effectiveness
- Water/land acquisition tracking

Research

- Hatcheries/Artificial Propagation
- Hydrosystem
- Tributary and Mainstem Habitat
- The Estuary
- The Ocean
- Harvest
- Population Structure and Diversity
- Effects of Climate Change on Fish and Wildlife
- Toxics
- Invasive Species
- Human Development
- Monitoring and Evaluation

On-the-Ground Actions

- Water/land acquisition
- Predator control
- Mainstem habitat and water quality improvements
- Fish passage survival improvements
- Artificial production
- Harvest management

Attachment 2a. Revised Monitoring and Evaluation Questions for Mainstem Systemwide Review

Monitoring Component	What do we want to know?
1. Population status and trends	Does the proposed project generate information that can be used to assess population abundance, productivity, diversity, spatial structure, etc. in relation to management objectives identified in the appropriate guidance documents?
2a. Hydro system survival status and trends	Does the proposed project address direct and delayed mortality or other important characteristics influenced by the hydro system such as survival, abundance, behavior, growth, migration timing, etc?
2b. Hydro system action effectiveness	Does the proposed project identify potential limiting factors of the hydro system and/or measure the outcome of implemented hydro actions directed at improving such variables as survival (direct & delayed), abundance, behavior, water quality, etc?
2c. Hydro system uncertainty research	Does the proposed project address key uncertainties that result from the influence of the hydro system on fish? In particular, does the project address issues of delayed mortality for fish that migrate inriver or are transported?
3a. Hatchery fish population status, trends, and survival	Does the proposed project address abundance, survival, composition, contribution, straying, etc. relative to objectives identified in the appropriate guidance documents?
3b. Hatchery action effectiveness	Does the proposed project identify potential limiting hatchery culture or supplementation practices and/or measure outcomes of implemented hatchery actions?
3c. Hatchery uncertainty research	Does the proposed project address key uncertainties related to such variables as fish culture practices, in-hatchery stock management, genetic population structure, stray issues, the development of conservation strategies, fish health management, kelt reconditioning, etc?
4a. Harvest status trends	Does the proposed project measure harvest rates and other harvest variables for wild and hatchery population groups?
4b. Harvest action effectiveness	Are new selective gear types effective at harvesting? Are there other methods available to implement

Monitoring Component	What do we want to know?
	selective fisheries (time/area)?
5a. Habitat status and trends (tributary, mainstem, estuary, and ocean)	Does the proposed project address biological and physical conditions of mainstem, estuary, or tributary habitat relative to management objectives identified in the appropriate guidance documents?
5b. Habitat action effectiveness (tributary, mainstem, and estuary)	Does the proposed project identify potential limiting mainstem, estuary, or tributary habitat conditions and/or measure outcomes of implemented habitat actions?
5c. Habitat uncertainty research	Does the proposed project address key uncertainties related to measuring and evaluating habitat benefits?
6. Basinwide and province evaluation	Are the individual actions in the various subbasins and mainstem/systemwide achieving the objectives at the basin and province levels for populations and habitats?
6a. Data Management	Establish an Internet-based system to disseminate the data needed to respond to these management questions?
6b. Reporting	Does the project contribute to presenting status of populations relative to the collective projects funded by Program for the various Hs?

Attachment 2b. Focal Themes and Critical Uncertainties from the Columbia River Research Plan (NPCC approved in February 2006).

Focal Research Themes	Critical Uncertainties
(1) Hatcheries/Artificial Production	*Conventional Hatchery Production—* 1. What is the cost to natural populations from competition, predation (direct and indirect), and disease caused by interactions with hatchery origin juveniles and from harvest in fisheries targeting hatchery-origin adults? 2. To what extent can interactions between production-hatchery fish and naturally produced wild fish be reduced (e.g., with the goal of achieving sustainable long-term productivity and resilience of the wild component of the population by spatial or temporal partitioning of natural and artificial production at the subbasin, province, basin, and regional scale)? *Supplementation—* 3. What is the magnitude of any demographic benefit to the production of natural-origin juveniles and adults from the natural spawning of hatchery-origin supplementation adults? 4. What are the range, magnitude, and rates of change of natural spawning fitness of integrated (supplemented) populations, and how are these related to management rules, including the proportion of hatchery fish permitted on the spawning grounds, the broodstock mining rate, and the proportion of natural origin adults in the hatchery broodstock? 5. Can the carrying capacity of freshwater habitat be accurately determined and, if so, how should this information be used to establish the goals and limitations of supplementation programs within subbasins? *All Hatcheries—* 6. What is the relationship between basinwide hatchery production and the survival and growth of naturally produced fish in freshwater, estuarine, and oceanic habitats? 7. What effect do hatchery fish have on other species in the freshwater and estuarine habitats into which they are released?
(2) Hydrosystem	1. What is the relationship between levels of flow and survival of juvenile and adult fish through the Columbia Basin hydrosystem? Do changes in spill and other flow manipulations significantly affect water quality, smolt travel rate, and survival during migration? How do effects vary among species, life-history stages, and migration timings? What is the role of hydrodynamic features other than mid-channel velocity in fish migration? What is the relationship between ratios of transport and in-river return rates and measurements of juvenile survival (D values)? 2. Under what conditions is delayed mortality related to a fishes downstream migration experience and the magnitude of that delayed hydrosystem mortality? 3. What are the effects of multiple dam passages, transportation, and spill operations on adult fish migration behavior, straying, and pre-spawn mortality, and juvenile-to-adult survival rates? 4. What is the effect of hydrosystem flow stabilization, flow characteristics, and channel features on anadromous and resident fish species and stocks? What are the ecological effects of hydrosystem operations on downstream mainstem, estuarine, and plume habitats and on populations of fish and wildlife? 5. What are the optimal temperatures and water quality regimes for fish survival in tributary and mainstem reaches affected by dams, and are there options for hydrosystem operations that would enable these optimal water quality characteristics to be achieved? What would be

Focal Research Themes	Critical Uncertainties
	the effects of such changes in operations and environment on fish, shoreline and riparian habitat, and wildlife?
(3) Tributary and Mainstem Habitat	1. To what extent do tributary habitat restoration actions affect the survival, productivity, distribution, and abundance of native fish populations? 2. Are the current procedures being used to identify limiting habitat factors accurate? 3. What are the impacts of hydrosystem operations on mainstem habitats, including the freshwater tidal realm from Bonneville Dam to the salt wedge? How might hydrosystem operations be altered to recover mainstem habitats? 4. What pattern and amount of habitat protection and restoration is needed to ensure long-term viability of fish and wildlife populations in the face of natural environmental variation as well as likely human impacts on habitat in the future?
(4) The Estuary	1. What is the significance to fish survival, production, and life-history diversities of habitat degradation or restoration in the estuary as compared with impacts to other habitats in the basin? How does this partitioning of effects vary among species and life-history types? 2. What are the highest priority estuarine habitat types and ecological functions for protection and restoration (e.g., what are most important habitats in the estuary for restoring and maintaining life-history diversities of subyearling Chinook and chum salmon, and how effective were past projects in restoring nursery/feeding areas)? 3. What specific factors affect survival and migration of species and life-history types of fish through the estuary, and how is the timing of ocean entry related to subsequent survival?
(5) The Ocean	1. Can stock-specific data on ocean abundance, distribution, density-dependent growth and survival, and migration of salmonids, both hatchery and wild, be used to evaluate and adjust marine fishery interceptions, harvest, and hatchery production in order to optimize harvests and ecological benefits within the Columbia River Basin? 2. Can monitoring of ocean conditions and abundance of salmon and steelhead during their first weeks or months at sea improve our ability to predict inter-annual fluctuations in the production of Columbia Basin Evolutionarily Significant Units (ESUs) or populations to enable appropriate changes to harvest levels? 3. How can inter-annual and inter-decadal changes in ocean conditions be incorporated into management decisions relating to hydrosystem operations, the numbers and timing of hatchery releases, and harvest levels to enhance survival rates, diversity, and viability of ESA-listed salmonids? 4. What are the effects of commercial and sport fishing on ocean food webs?

Focal Research Themes	Critical Uncertainties
(6) Harvest	1. What are the effects of fishery interceptions and harvest in mixed-stock areas, such as the ocean and mainstem Columbia, on the abundance, productivity, and viability of ESUs or populations, and how can fishery interceptions and harvests of ESUs or populations, both hatchery and wild, best be managed to minimize the effects of harvest on the abundance, productivity, and viability of those ESUs and populations? 2. What new harvest and escapement strategies can be employed to improve harvest opportunities and ecological benefits within the Columbia Basin while minimizing negative effects on ESUs or populations of concern? Can genetic techniques be used to quantify impacts on wild or ESA-listed stocks in ocean fisheries? 3. How can the multiple ecological benefits that salmon provide to the watersheds where they spawn (e.g., provision of a food resource for wildlife and a nutrient source for streams and riparian areas) be incorporated effectively into procedures for establishing escapement goals?
(7) Population Structure and Diversity	1. What approaches to population recovery and habitat restoration are most effective in regaining meta-population structure and diversity that will increase viability of fish and wildlife in the Columbia River Basin? 2. How do artificial production and supplementation impact the maintenance or restoration of an ecologically functional metapopulation structure? 3. What is the relationship between genetic diversity and ecological and evolutionary performance, and to what extent does the loss of stock diversity reduce the fitness, and hence survival rate and resilience, of remaining populations? 4. What are the differential effects of flow augmentation, transportation, and summer spill on “ocean type vs. reservoir type” fall Chinook?
(8) Effects of Climate Change on Fish and Wildlife	1. Can integrated ecological monitoring be used to determine how climate change simultaneously affects fish and wildlife and the freshwater, estuarine, ocean, and terrestrial habitats and ecosystems that sustain them? 2. Can indices of climate change be used to better understand and predict interannual and interdecadal changes in production, abundance, diversity, and distribution of Columbia Basin fish and wildlife? 3. What long-term changes are predicted in the Columbia River Basin and the northeast Pacific Ocean, how will they affect the fishes and wildlife in the region, and what actions can ameliorate increased water temperatures, decreased summer river flows, and other ecosystem changes?
(9) Toxics	1. What is the distribution and concentration of toxics, including emerging contaminants, in the Columbia River Basin, and what are/have been their trends over time? 2. How do toxic substances, alone and in combination, affect fish and wildlife distribution and abundance, survival, and productivity?
(10) Invasive Species	1. What is the current distribution and abundance of invasive and deliberately introduced nonnative species (e.g., the baseline condition), and how is this distribution related to existing habitat conditions (e.g., flow and temperature regimes, human development, restoration actions)? 2. To what extent do (or will) invasive and nonnative species significantly affect the potential recovery of native fish and wildlife species in the Columbia River Basin? 3. What are the primary pathways of introduction of invasive and nonnative species, and what methods could limit new introductions or mitigate the effects of currently established invasives?

Focal Research Themes	Critical Uncertainties
(11) Human Development	1. What changes in human population density, distribution, and economic activity are expected over the next 20 years? 50 years? 2. How might the projected changes under different development scenarios affect land use patterns, protection and restoration efforts, habitats, and fish and wildlife populations?
(12) Monitoring and Evaluation	1. What are the range, magnitude, and rates of change of natural spawning fitness of integrated (supplemented) populations, and how are these related to management rules, including the proportion of hatchery fish permitted on the spawning grounds, the broodstock mining rate, and the proportion of natural-origin adults in the hatchery broodstock? 2. Can a common probabilistic (statistical) site selection procedure for population and habitat status and trend monitoring be developed cooperatively? 3. Can a scientifically credible trend monitoring procedure based on remote sensing, photography, and data layers in a GIS format be developed? 4. Can empirical (e.g., regression) models for prediction of current abundance or presence/absence of focal species concurrent with the collection of data on status and trends of wildlife and fish populations and habitat be developed?

Attachment 3. Revised Proposal Review Questions for the Mainstem Systemwide Review Team.

Proposal Review Questions	
1. Are tasks in this proposal called for in a guidance document*?	**ID Doc?**
2. Are the objectives clearly defined with measurable outcomes and tasks?	**Y or N**
3. Does the project address an urgent requirement (or management question) or threat to population maintenance and/or habitat protection for a focal species (i.e., related to threatened, endangered or sensitive species)?	**Y or N**
4. Will the project provide data critical for in-season, annual and/or longer term management decisions?	**How will the data be used?**
5. Are the resources proposed (staff, equipment, materials) appropriate to achieve the objectives and time frame milestones?	**Y or N**
6. Does the proposal demonstrate that the project uses appropriate scientifically valid strategies or techniques and sound principles (best available science)?	**Y or N**
7. Are there explicit plans for how the information, technology, etc. from this project will be disseminated or used (particularly to support management activities)?	**Y or N**
8. What is the expected duration of this project?	**# Years?**
9. Would a stranded investment be created if the project were not funded?	**Y or N**
10. Are there components of the project that could be reduced, deferred or eliminated?	**ID Work Elements**

*Guidance Documents include:

For this review cycle, the Council's 2000 Fish and Wildlife Program, 2003 Mainstem Amendment, 2005 Mainstem Subbasin Plans, the 2004 NOAA FCRPS Biological Opinion (under remand) and Updated Proposed Action, the Interior Columbia River Technical Recovery Team's population designations and viability criteria, USFWS Recovery Plans, and other biological opinions will be used as the primary guidance documents. The Northwest Power and Conservation Council (NPCC) recently approved a Research Plan and is currently developing a monitoring and evaluation guidance document for selection of monitoring projects. Also available for reference is the 2005 ISRP Retrospective Report.

Attachment 4. Revised Mainstem Systemwide Review Team (MSRT) prioritization categories for FY 2007-2009 proposal reviews.

- Core Program - These projects are integral to the infrastructure and/or information needs of the F&W Program in the Columbia River Basin for planning, evaluation, and management of the fish and wildlife resources. For on-the-ground efforts, these projects should be necessary for the protection, survival, or recovery of a species. Explicit 2004 UPA projects should be included in this category.
- High Priority - These projects or tasks within a project are high priority within the Program that are not addressed by Core Program projects. The project addresses a specific need within an appropriate guidance document.*
- Recommended Actions - These are good projects that cannot demonstrate a significant loss by not being funded this year. These projects should be funded, but under a limited budget, they could be delayed temporarily without significant loss.
- Do not fund - These projects are either technically inadequate or do not address a need within an appropriate guidance document.* These projects may be inappropriate for BPA funding.

*Appropriate Guidance Documents include:

For this review cycle, the Council's 2000 Fish and Wildlife Program, 2003 Mainstem Amendment, 2005 Mainstem Sub-basin Plans, the 2004 NMFS FCRPS Biological Opinion (under remand) and Federal Action Agencies Updated Proposed Action, the Interior Columbia River Technical Recovery Team's population designations and viability criteria, USFWS Recovery Plans, and other biological opinions will be used as the primary guidance documents. The Northwest Power and Conservation Council (NPCC) recently approved a Research Plan and is currently developing a monitoring and evaluation guidance document for selection of monitoring projects. Also available for reference is the 2005 ISRP Retrospective Report.