# Mainstem Systemwide Review Team (MSRT)
# Project Review Summary
# July 27, 2006

# Final Recommendations

## Executive Summary

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) provided staff to organize and facilitate the MSRT. The MSRT consisted of representatives from the Region's state, federal, and tribal fish and wildlife managers, Bonneville, U.S. Army Corps of Engineers, Council staff, and other interested parties. Participation in the MSRT was voluntary and was open to anyone desiring to participate. The purpose of the MSRT was to provide recommendations to the Council staff for their use in the development of issues for Council consideration.

The MSRT review focused on management priority, since the ISRP's review addressed the scientific soundness of the proposals. An initial MSRT review sorted proposals into prioritization categories and issues. Further review and analysis occurred to develop project-specific funding recommendations to fit within the Basinwide and Multi-province budget allocations. The results of the MSRT recommendations will serve as a basis for the Council staff's development of recommendations for Council consideration.

Each proposal was placed in one or more of the categories identified in the Program Priorities (Appendix 1) and then tied to the monitoring components or focal research themes provided with the Monitoring and Evaluation Questions and Research Critical Uncertainties (Appendix 2a and 2b). This categorization helped organize the recommendations and identify what Program level priorities were covered with the existing proposals. Many projects addressed multiple functions within the Mainstem Systemwide framework (Appendix 1 Program Priorities).

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: 1) Core Program - 28 projects requesting $41M, 2) High Priority - 32 projects requesting $20M, 3) Recommended Action - 55 projects requesting $17M, and 4) Do Not Fund - 21 projects requesting $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 reviewed by the MSRT and incorporated in the Program framework. The Draft recommendations were provided to the Council staff on May 5, 2006.

The available funding for the Basinwide and Multi-province categories is $32,644,120 and $13,411,338, respectively. In order to make a first, coarse scale sort through projects, the MSRT adopted two budgeting principles:

1) Only proposals that received a Core Program and High Priority recommendation by the MSRT in their May 5 recommendation will receive a funding recommendation; and,
2) Proposals that received a Not Fundable review from the Independent Science Review Panel (ISRP) will not receive a funding recommendation from the MSRT.

A second set of principles were applied to the Basinwide budget allocation in order to facilitate the budget balancing exercise. The Basinwide budget was equally distributed between the three primary categories (Coordination/Support, M&E, and Research) as initial budget targets, but

remained flexible as the priority work determined modifications to the budget targets. The MSRT agreed to a rule of rolling proposed budgets back to FY 2006 levels, unless there was a compelling reason to allow increases. A base assumption was that there is not enough funding to allow projects to be funded at historic levels, so this would provide a starting place for budget discussions.

The MSRT reviewed every project within the Coordination/Support, Monitoring and Evaluation, and Research categories of the Basinwide province and identified three year budget recommendations for each project. During this exercise, the MSRT identified lost tasks (high priority tasks that were cut due to limited funds), that may fit within the available budget allocations if funds were transferred between the categories. Once all of the proposals had been revisited, opportunities for funding high priority tasks were compared in order to allocate remaining funds. A priority "task" identified by the MSRT was to add some level of funding into ongoing projects that have been level funded for up to five years, and will continue to be level funded for the next three years. The MSRT agreed that ongoing projects should be provided a 5% adjustment in funding (from their FY 2006 funding levels) in order to cover increased costs to the projects. Once that issue was addressed, the MSRT addressed the other lost tasks for projects.

Project specific and programmatic comments are provided throughout this document. A total of 15 projects were recommended for funding in the Coordination/Support category of the Basinwide budget for a total of approximately $11.4 million each year. The MSRT recommended funding 14 projects in the Monitoring and Evaluation category of the Basinwide budget. These projects address many of the priorities within the Council's Draft Monitoring and Evaluation Guidance, and support data collection used for regional decision making. The MSRT recommended funding 16 projects in the Research category of the Basinwide Budget. These projects address priorities within the Council's Draft Research Plan. The MSRT recommended funding 12 proposals in the Multi-province budget category.

The MSRT addressed several major issues during their review and provided a final recommendation for each of these issues. A full description of the final recommendation can be found with the project specific recommendations, a brief summary of these issues can be found in the introductory chapter to the report.

With the submission of these final recommendations, the MSRT has completed its assignment.

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**Mainstem Systemwide Review Team (MSRT)**
**Project Review Summary**
**July 27, 2006**

## 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) provided staff to organize and facilitate the MSRT. The MSRT consisted of representatives from the Region's state, federal, and tribal fish and wildlife managers, Bonneville, U.S. Army Corps of Engineers, Council staff, and other interested parties. Participation in the MSRT was voluntary and was open to anyone desiring to participate. The purpose of the MSRT was to provide recommendations to the Council staff for their use in the development of issues for Council consideration.

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, 2006 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 Appendix 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. This framework was based on the organizational structure of the NPCC's Draft Research Plan and Draft Monitoring and Evaluation Guidance. The MSRT agreed to operate under majority rule, but emphasized that capturing in writing dissenting opinions would be important for presenting the full context of their discussion on these important topics.

The MSRT review focused on management priority, since the ISRP's review addressed 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. Further review and analysis occurred to develop project specific funding recommendations to fit within the Basinwide and Multi-province budget allocations. The results of the MSRT recommendations will serve as a basis for the Council staff's development of recommendations for Council consideration.

## Summary of Initial MSRT Review

The MSRT completed an initial review of all the proposals on April 18, 2006. Each proposal was placed in one or more of the categories identified in the Program Priorities (Appendix 1) and then tied to the monitoring components or focal research themes provided with the Monitoring and Evaluation Questions and Research Critical Uncertainties (Appendix 2a and 2b). This categorization helped organize the recommendations and identify what Program level priorities were covered with the existing proposals. Many projects addressed multiple functions within the Mainstem Systemwide framework (Appendix 1 Program Priorities).

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: 1) Core Program - 28 projects requesting $41M, 2) High Priority - 32 projects requesting $20M, 3) Recommended Action - 55

projects requesting $17M, and 4) Do Not Fund - 21 projects requesting $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 reviewed by the MSRT and incorporated in the Program framework. The Draft recommendations were provided to the Council staff on May 5, 2006.

The proposal reviews were attended by staff members from BPA, CTCR, CRITFC, CTUIR, IDFG, KT, NOAA Fisheries, NPT, NPCC, ODFW, USACE, USFWS, and WDFW. Many projects sponsors participated over the phone and in attendance.

**Guiding Principles of MSRT Budget Prioritization**

On June 16, 2006 the MSRT agreed to provide a balanced budget recommendation for Council staff. The available funding for the Basinwide and Multi-province categories is $32,644,120 and $13,411,338, respectively. There is currently approximately $52 million in proposal requests for the Basinwide category and approximately $17 million in requests for the Multi-province category. In order to balance these budgets, severe budgeting decisions were required for each project. In order to make a first, coarse scale sort through projects, the MSRT adopted two budgeting principles:

3) Only proposals that received a Core Program and High Priority recommendation by the MSRT in their May 5 recommendation will receive a funding recommendation; and,
4) Proposals that received a Not Fundable review from the Independent Science Review Panel (ISRP) will not receive a funding recommendation from the MSRT.

A second set of principles were applied to the Basinwide budget allocation in order to facilitate the budget balancing exercise. The budget allocation for the entire Fish and Wildlife Program was based, primarily, on historic funding. Therefore, the initial allocation within the Basinwide funding category was loosely based on historic funding; although it is important to point out that the priority work was the driver for the final funding recommendations. The budget allocation decisions prescribed here imply some level of prioritization between categories (Coordination/Support, Monitoring and Evaluation, and Research) as well as between sub-categories (Hatchery Research, Hydrosystem Research, Ocean Research, etc.).

The Basinwide budget was equally distributed between the three primary categories (Coordination/Support, M&E, and Research) as initial budget targets, but remained flexible as the priority work determined modifications to the budget targets. The team agreed to a schedule for meetings to perform the budget balancing exercise and addressed both the Basinwide and the Multi-province (on-the-ground) categories in their effort.

The MSRT agreed to use the CBFWA data management framework document, submitted to the NPCC in response to the Data Center Proposal, as a foundation for constructing the recommendations for Coordination/Support projects addressing data management needs. This document will be modified and improved throughout the process and incorporated into the final MSRT recommendation.

The MSRT agreed to a rule of rolling proposed budgets back to FY 2006 levels as general guidance, unless there was a compelling reason to allow increases. A base assumption was that

there is not enough funding to allow projects to be funded at historic levels, so this would provide a starting place for budget discussions.

Two ongoing projects were used to develop the Multi-province allocation but were reviewed in the Lower Columbia Province; the MSRT recommends shifting the funds associated with those projects to develop the original budget allocation back to the Lower Columbia Province budget allocation to support those proposals (200012000 and 200105300). This action reduced the Multi-province budget target from $13,411,338 to $12,853,338.

The MSRT recommended moving proposal 200714600 to the M&E portion of the Basinwide budget category in order to support a comprehensive review of bull trout proposals. Since this is a new proposal, shifting the proposal should not affect the overall allocation between the two categories.

The MSRT reviewed every single project within the Coordination/Support, Monitoring and Evaluation, and Research categories of the Basinwide province and identified three year budget recommendations for each project. During this exercise, the MSRT identified lost tasks (high priority tasks that were cut due to limited funds), that may fit within the available budget allocations if funds were transferred between the categories.

Once all of the proposals had been revisited, opportunities for funding high priority tasks were compared in order to allocate remaining funds. A priority "task" identified by the MSRT was to add some level of funding into ongoing projects that have been level funded for up to five years, and will continue to be level funded for the next three years. The MSRT agreed that ongoing projects should be provided a 5% adjustment in funding (from their FY 2006 funding levels) in order to cover increased costs to the projects. Once that issue was addressed, the MSRT addressed the other lost tasks for projects.

**MSRT Recommendations**

The MSRT was able to balance the Basinwide and Multi-province budgets (Table 1). Project specific and programmatic comments are provided throughout this document. A total of 15 projects were recommended for funding in the Coordination/Support category of the Basinwide budget for a total of approximately $11.4 million each year. The Core Program and High Priority proposals that were not given a funding recommendation in this category related to data management projects (most of which are related to the StreamNet proposal) and fish passage monitoring (which appeared to duplicate the work that the MSRT forwarded in their final recommendation).

The MSRT recommended funding 14 projects in the Monitoring and Evaluation category of the Basinwide budget. These projects address many of the priorities within the Council's Draft Monitoring and Evaluation Guidance, and support data collection used for regional decision making. Three new start High Priority proposals were not funded due to limited funding in this category, and should be considered if additional funding were made available.

The MSRT recommended funding 16 projects in the Research category of the Basinwide Budget. These projects address priorities within the Council's Draft Research Plan. Three High Priority proposals received an ISRP Not Fundable recommendation and therefore were not included in the budget balance exercise. Two High Priority ocean research proposals were not provided a budget. Under the limited funding scenario, the MSRT determined these two proposals do not address the primary management questions related to operation and mitigation of the FCRPS.

One Core Program proposal focusing on estuary research had been reviewed and prioritized in the Columbia Estuary province, so the MSRT chose not to provide a budget for that project within the Basinwide allocation.

The MSRT recommended funding 12 proposals in the Multi-province budget category. Two proposals were reviewed in the Lower Columbia province and should be funded in that province. The funding for these two proposals that was used to create the Multi-province allocation should be moved to that province as well.

**Major Issues Identified in MSRT Review**

The MSRT addressed several major issues during their review and provided a final recommendation for each of these issues. A full description of the final recommendation can be found with the project specific recommendations.

1) Fish and wildlife manager coordination -- The MSRT initially recommended that the project sponsors for the following projects 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 through integrated funding within the CBFWA contract). A follow-up meeting occurred on May 2, 2006 to discuss this issue further. The project sponsors agreed that the description of the issue was appropriate (2 parts), but did not come to a consensus decision on how best to proceed.

The MSRT provided a budget recommendation for each project in the F&W Manager Coordination/Support sub-category. The MSRT recommended funding the ongoing projects at 2006 levels and recommended funding the new proposals consistent with the ongoing projects – consistent funding levels and accounting standards. The UCUT proposal was fully funded and the Kalispel and Spokane proposals were funded at $30,000 to be consistent with existing manager support contracts through CBFWA for similar work. The MSRT emphasized that reporting of work against specific tasks should be consistent with the current CBFWA contract to insure accountability among the new proposals. The Kalispel Tribe objects to the MSRT funding decision for Coordination/Support proposals.

2) Database management -- The MSRT adopted the data management framework that had been developed by CBFWA in response to the NPCC's Columbia Data Center proposal. The MSRT provided funding recommendations consistent with that framework. For the funding period FY 2007-2009, the MSRT recommends that StreamNet focus on developing a hierarchical geographic data structure that directly supports subbasin planning information and Columbia Basin recovery planning. The MSRT recommends that the IBIS proposal be limited to providing hierarchical mapping of wildlife habitats to support future subbasin planning. The MSRT anticipates a workshop or meeting involving the StreamNet steering committee, regional fish and wildlife managers, BPA, and NPCC staff to define StreamNet and other database managers' role and functions for FY 2007-2009. In order to help facilitate restructuring the StreamNet project, CBFWA should be used to facilitate workshops to align the biologists with the data managers within the fish and wildlife management agencies to more clearly define the specific data requirements that StreamNet and IBIS will be expected to provide.

Currently there is not a requirement in BPA contracts to report data to StreamNet or other data management entities, since there is not a clear platform and purpose for that data to reside. Input to the Council's M&E Framework could help define information needs for regional data management and establish the platform and purpose for project level data reporting into a regional framework.

3) Fish passage monitoring -- The MSRT recommends that all proposals in this category be subjected to the oversight by the Fish Passage Oversight Board (FPOB) as described in the 2003 Mainstem Amendment. The 2003 Mainstem Amendment should be the foundation for funding proposals that address mainstem fish passage monitoring. The FPOB should meet to discuss the proposals and insure coordination and collaboration between the project sponsors. The proposals include the CBFWA fish passage center functions proposal and the UW DART proposals.

4) Lamprey – The MSRT recommends funding lamprey proposals that are focused on coordination of lamprey abundance and distribution data across the basin, consistent with the Lamprey Technical Work Group's critical uncertainties document. The lamprey projects should be closely coordinated with the LTWG.

5) Bull Trout -- There are several bull trout monitoring projects proposed here that provide good coverage of the basin. Other bull trout monitoring projects are proposed in the local subbasin 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. Basic monitoring and evaluation for bull trout is a Core Program activity, the additional research activities in some of the bull trout projects are a lesser priority. The final MSRT recommendation provided here is based on tight coordination between the projects and other existing bull trout efforts ongoing in the basin.

6) Sturgeon -- The MSRT recommended funding only the ongoing sturgeon proposal of the Mainstem and Systemwide proposals. A comprehensive management plan for sturgeon is a High Priority need. CBFWA is working on a critical uncertainties document for Columbia River sturgeon.

7) Ocean research -- 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.

The MSRT believes that the NOAA Fisheries proposal best addresses the fundamental management questions necessary to improve management of the FCRPS. The significant investment in PIT tags is delivering information on the ocean life stage survival of salmon and steelhead, which is mainly what the two tracking projects would provide for the Program. Although, the MSRT believes that the two tracking projects are good studies for the questions they are addressing, they believe that under the limited funding scenario, and priority of other research needs, BPA should reduce their commitment to those two projects.

**Table 1.** Total budget recommendations by the MSRT by category in the Basinwide and Multi-province budget categories.

| | | FY 2007 MSRT Recommend. | FY 2008 MSRT Recommend. | FY 2009 MSRT Recommend. |
|---|---|---|---|---|
| Basinwide | Coordination/Support | $ 11,419,385 | $ 11,370,272 | $ 11,378,804 |
| | Program Support | | | |
| | F&W Manager Coordination/Support | $ 2,411,044 | $ 2,414,796 | $ 2,421,503 |
| | Council Support[1] | | | |
| | Support for Program contracts | $ 275,174 | $ 276,309 | $ 278,134 |
| | M&E Coordination | $ 1,047,500 | $ 1,047,500 | $ 1,047,500 |
| | Research Coordination | | | |
| | Information Dissemination | | | |
| | Regional Data Management | | | |
| | Mainstem passage monitoring | $ 2,245,667 | $ 2,191,667 | $ 2,191,667 |
| | Data management projects | $ 5,440,000 | $ 5,440,000 | $ 5,440,000 |
| | Monitoring and Evaluation | $ 12,705,499 | $ 12,761,107 | $ 12,825,124 |
| | Adult abundance | $ 3,265,220 | $ 3,273,717 | $ 3,282,469 |
| | Bull Trout | $ 573,912 | $ 573,912 | $ 573,912 |
| | Coded Wire Tag | $ 2,809,602 | $ 2,809,602 | $ 2,809,602 |
| | Lamprey | $ 500,000 | $ 500,000 | $ 500,000 |
| | Smolt Passage | $ 5,556,765 | $ 5,603,876 | $ 5,659,141 |
| | Research | $ 8,406,177 | $ 8,526,526 | $ 8,260,006 |
| | 1 Hatcheries/AP | $ 2,347,409 | $ 2,257,877 | $ 2,257,961 |
| | 2 Hydrosystem | $ 2,534,875 | $ 2,552,681 | $ 2,571,020 |
| | 3 Tributary and Mainstem Habitat | | | |
| | 4 Estuary | $ - | $ - | $ - |
| | 5 Ocean | $ 2,170,600 | $ 2,170,600 | $ 2,170,600 |
| | 6 Harvest | | | |
| | 7 Population Structure/Diversity | $ - | $ - | $ - |
| | 8 Climate Change | | | |
| | 9 Toxics | | | |
| | 10 Invasive species | | | |
| | 11 Human Development | | | |
| | 12 Monitoring and evaluation | $ 1,353,293 | $ 1,545,368 | $ 1,260,425 |
| | Total | $ 32,531,061 | $ 32,657,905 | $ 32,463,934 |
| MP | On-the-ground (Multi-province) | $ 12,842,102 | $ 12,683,021 | $ 12,619,389 |

**MSRT Recommendations for FY 2007-2009 Mainstem and Systemwide Proposals Sorted by Program Priority**

## I. Coordination/Support

A. Program Support

1) Fish and Wildlife Manager Coordination/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).

The MSRT initially recommended that the project sponsors for the following projects 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 through integrated funding within the CBFWA contract). A follow-up meeting occurred on May 2, 2006 to discuss this issue further. The project sponsors agreed that the description of the issue was appropriate (2 parts), but did not come to a consensus decision on how best to proceed. On July 5, 2006 the MSRT made a final recommendation for projects within this category.

***History of support for coordination on regional issues-***

The state and federal agencies and Indian Tribes of the Columbia Basin are the legally recognized managers of the fish and wildlife resources, through federal and state statutes, treaties, and court actions. In 1987 these fish and wildlife management agencies and Indian Tribes joined together to form the CBFWA for the purpose of coordinating their efforts to protect and enhance the fish and wildlife resources of the Columbia River Basin in the implementation of the Northwest Power Planning Council's Fish and Wildlife Program (Program). The three organizational objectives as outlined in the CBFWA charter are: provide interagency fish and wildlife management coordination, provide a centralized, regional entity for Columbia Basin Fish and Wildlife Program coordination, and coordinate activities between CBFWA and the land and water management authorities of the Columbia River Basin.

In 1995, the Columbia River Inter-Tribal Fish Commission (CRITFC) released their salmon restoration plan Wy-Kan-Ush-Mi Wa-Kish-Wit, Spirit of the Salmon. In 1998, CRITFC was awarded a contract by BPA to create and publish a Watershed Restoration Handbook and organize inter-tribal habitat and production workshops. CRITFC's coordination occurred at the technical level with tribal habitat projects addressing the restoration plan. Since 1998, the project has continued to coordinate tribal project sponsors on topic specific issues and aggressively pursued outside funding for tribal projects, including the Spirit of the Salmon fund and coordination of PCSRF funding. This project provides assistance to CRITFC's four member tribes on all regional salmon recovery processes.

In 2005, the Upper Columbia United Tribes (UCUT) expressed concern that CBFWA was not serving their member tribes. The tribes expressed concern that they were at a disadvantage geographically and had limited staff resources. Also in 2005, the Upper Columbia United Tribes (UCUT) signed a Memorandum of Agreement with Bonneville Power Administration to improve relationships and communications. The MOU describes an expectation of increased funding in

the upper Columbia River eco-region (which is defined as the Intermountain Province of the 2000 Program and the Okanogan and Kootenai subbasins) and describes an increased commitment to government to government consultations and coordination. The UCUT proposal will facilitate and coordinate five UCUT member Tribes' participation in regional activities involving implementation of the FWP, annual project and funding recommendations, rolling provincial review, subbasin planning, and program amendment recommendations.

***History of travel and FTE support for fish and wildlife manager's participation-***

According to a March 4, 1999 Memo from Brian Allee to CBFWA Members, "On February 24, 1999, the Council recommended an increase in CBFWA's implementation project for the purpose of funding agency and tribal staff time for regional coordination. Along with that recommendation is the requirement that these expenses can be fully accounted for by verifiable records by the Members." Verifiable records were defined as signed attendance sheets at every meeting, an integrated billing record with a description of the work performed identified by objective, task and activity, and travel claims were to be attached to the billing record. "The trio of Attendance Sheet, Billing Record, and Travel Claim will constitute verifiable records." This funding was specifically limited to funding for work on the annual implementation work plan. At the time, the Council viewed this as an opportunity to understand how much effort was being expended on regional coordination, since prior to 1999, regional coordination was absorbed within individual contracts for other work.

In FY 2000, the CBFWA work plan and budget was approved with funding for reimbursement of costs related to travel to attend CBFWA meetings and staff time spent on five approved objectives: 1) FY 2001 project renewal process, 2) Rolling provincial reviews and subbasin summaries, 3) Within-year budget reviews, 4) Template development for watershed assessments, subbasin assessments, and subbasin plans, and 5) Coordination of Program amendment recommendations. Again, CBFWA was responsible for tracking expenditures in a verifiable manner and submitting monthly reports to Council staff on actual expenditures.

## MSRT Recommendation

The MSRT provided a budget recommendation for each project in the F&W Manager Coordination/Support sub-category. The MSRT recommended funding the ongoing projects at 2006 levels and recommended funding the new proposals consistent with the ongoing projects – consistent funding levels and accounting standards. The UCUT proposal was fully funded and the Kalispel and Spokane proposals were funded at $30,000 to be consistent with existing manager support contracts through CBFWA for similar work. The MSRT emphasized that reporting of work against specific tasks should be consistent with the current CBFWA contract to insure accountability among the new proposals (see CBFWA general comments).

The Kalispel Tribe objects to the MSRT funding decision for Coordination/Support proposals. Theyhave provided the following comments: *The Kalispel and Spokane proposals are not only to participate, but more directly to coordinate governmental needs associated with the Program and its implementation. These proposals are not different from the combined proposals by CRITFC and CBFWA that were more fully funded. A portion of these proposals is to fill gaps in the representation and needs that were once the role of CBFWA and its staff. It appears that no longer being members of that organization, decisions are being made which are punitive and not fully understood. A $30,000 proposal to "participate" is inadequate to meet our governmental needs. We made concessions and modifications to our proposals already. This "forced reduction" with contracting caveats is unacceptable. Our contracting and project implementation*

*standards will be negotiated with BPA. Part of the rationale for not contracting our actual needs with CBFWA in the past is that the contracting requirements were cumbersome and time consuming. These "standards" were inefficient and took time away from other duties. We will negotiate with BPA based upon our needs and BPA's standards. We understand the CBFWA membership's fear that these two proposals set a precedent for funding coordination and participation separate from CBFWA. Each member should assess its membership and needs to determine whether or not it makes sense to continue to coordinate and participate its activities within the Program through CBFWA. Once doing so, a member may wish to withdraw from CBFWA and seek those resources independently.*

**198906201 - Annual Work Plan CBFWA**

This proposal also addresses functions under item 6) Coordination of information dissemination.
**Sponsor:** Columbia Basin Fish & Wildlife Authority (CBFWA)
**Requested FY07:** $2,253,787 **FY08:** $2,253,787 **FY09:** $2,253,787
**MSRT Recommended FY07:** $2,071,450 **FY08:** $2,071,450 **FY09:** $2,071,450
**Category:** F&W Mgr Coord **Prioritization Category:** Core Program
**General comments:** The portion of this project that addresses support for regional coordination of the fish and wildlife managers should be discussed in relation to other projects proposing similar work, in particular project proposals 200710600, 200710800, 200716200, and with Program coordination tasks in project proposal 199803100. The project also provides regional reporting that should be tied with regional data management projects. The portion of the CBFWA contract that supports fish and wildlife manager participation in regional activities should be considered in the "review as a group" prioritization category.
**Budget comments:** The CBFWA budget supports two types of coordination - staff support and manager reimbursement. The staff support portion of the project should be level funded from FY 2006, plus a slight increase (5%) to cover increased costs (FY2006 staff portion totaled $1,629,000). The manager reimbursement portion of the project should be funded at $361,000.
*Current CBFWA contract language for manager support:*
***Deliverable - Active and informed participation in CBFWA decision making with the ability to represent the Agency/Tribes perspective.***

1. Participation in CBFWA committees, PNAMP, LTWG, RCG, BOG, NPCC and BPA.
   - Ensure that issues of interest appear on the meeting agendas
   - Review meeting materials before meetings
   - Attend meetings
   - Actively participate in consensus decision making
   - Review action notes for sufficiency and accuracy
2. Members participation in providing technical review.
   - Prepare any documents needed for meetings
   - Brief policy people on decision items to be discussed
   - Report to and brief policy people
3. Members participation in presentations to the NPCC, BPA, and/or other policy makers.
   - Review decision material and talking points
   - Prepare panel or individual presentation to decision makers
   - Attend meeting and participate in presentation

All invoices are to be billed on or accompanied by a Travel Claim and Time Sheet. Payment can not be sent until these forms are received.

**199803100 - Implement Wy-Kan-Ush-Mi Wa-Kish-Wit**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $234,205 **FY08:** $234,205 **FY09:** $234,205
**MSRT Recommended FY07:** $210,000 **FY08:** $210,000 **FY09:** $210,000
**Category:** F&W Mgr Coord **Prioritization Category:** Core Program

**General comments:** The portion of this project that addresses support for regional coordination of the fish and wildlife managers should be discussed in relation to other projects proposing similar work. This project coordinates tribal members at the project level to insure consistency between projects and among funding processes. One member expressed concern that funding for this program should be concomitant with upriver and Snake River tribal recovery plans such as the Okanogan Initiative. Performance standards and benchmarks should be clearly articulated and reported to the region.
**Budget comments:** The project should be funded at FY 2006 levels, plus a slight (5%) increase due to increased costs. The proposal should provide the same level of accountability in reporting as the CBFWA project (sign in sheets, meeting summaries, etc.).

**200710800 - Regional Coordination for Upper Columbia United Tribes**

**Sponsor:** Upper Columbia United Tribes
**Requested FY07:** $69,594 **FY08:** $73,346 **FY09:** $80,053
**MSRT Recommended FY07:** $69,594 **FY08:** $73,346 **FY09:** $80,053
**Category:** F&W Mgr Coord **Prioritization Category:** Core Program
**General comments:** BIA will cover the second half of the FTE proposed here. Some MSRT members expressed concern that this request is under scoped.
**Budget comments:** The MSRT supports funding a position at UCUT to provide better coordination between the UCUT members and Program related processes. The proposal should provide the same level of accountability in reporting as the CBFWA project (sign in sheets, meeting summaries, etc.).

**200710600 - Spokane Tribe Fish and Wildlife Planning and Coordination**

**Sponsor:** Spokane Tribe
**Requested FY07:** $93,100 **FY08:** $93,100 **FY09:** $93,100
**MSRT Recommended FY07:** $30,000 **FY08:** $30,000 **FY09:** $30,000
**Category:** F&W Mgr Coord **Prioritization Category:** Core Program
**General comments:** No comments.
**Budget comments:** The proposal should be funded at a level consistent with other fish and wildlife managers receiving reimbursement through the CBFWA contract, and with the same level of accountability in reporting. The CBFWA model should be followed for reporting and receiving reimbursement for coordination activities under this proposal.

**200716200 - Kalispel Tribe Fish and Wildlife Coordination**

**Sponsor:** Kalispel Tribe
**Requested FY07:** $90,000 **FY08:** $93,100 **FY09:** $96,200
**MSRT Recommended FY07:** $30,000 **FY08:** $30,000 **FY09:** $30,000
**Category:** F&W Mgr Coord **Prioritization Category:** Core Program
**General comments:** No comments.
**Budget comments:** The proposal should be funded at a level consistent with other fish and wildlife managers receiving reimbursement through the CBFWA contract, and with the same level of accountability in reporting. The CBFWA model should be followed for reporting and receiving reimbursement for coordination activities under this proposal.

2) Council support – ISRP & ISAB

In the original budget allocation for each province, a placeholder was established to fund the ISRP/ISAP separate from the Basinwide allocation.

**199600500 - ISAB**

**Sponsor:** Northwest Power and Conservation Council
**Requested FY07:** $566,718 **FY08:** $583,945 **FY09:** $601,703
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** NPCC support **Prioritization Category:** Core Program

**General comments:** Historically, the fish and wildlife managers have recommended funding the ISAB out of the Council's overhead funding and not take funding away from on-the-ground actions. This is not an action that would be supported by consensus of the MSRT.
**Budget comments:** This proposal will be funded out of the ISRP/ISAB placeholder.

3) BPA/Contract support

**198910700 - Statistical Support For Salmonid Survival Studies**

This proposal also addresses functions under Regional Data Management B1) Support mainstem passage monitoring and Monitoring and Evaluation E2) Salmon and Steelhead juvenile studies.
**Sponsor:** University of Washington
**Requested FY07:** $371,546 **FY08:** $382,507 **FY09:** $391,038
**MSRT Recommended FY07:** $251,228 **FY08:** $251,228 **FY09:** $251,228
**Category:** BPA/Contract Support **Prioritization Category:** High Priority
**General comments:** This project develops study designs. Directly supports NOAA survival studies. Provides general statistical support to any project sponsor that requests it. Methodology, consulting, study designs for tagging studies. This service is a high priority. It may serve the region better to have a consortium of independent statistical analysts available to project sponsors, rather than a single point source. This project is in the Action Agencies 2005-2007 Implementation Plan. New efforts proposed in this project should be reviewed in the context of similar regional efforts on Fall Chinook studies. One member stated that the proposal fails to identify the benefits to date to justify the current funding request level. The service appears to be under utilized and needs to be web based. The member suggests an independent cost analysis and use survey and that this project's relation to CSMEP and PNAMP be well defined for the next funding cycle.
**Budget comments:** Fund at a level more consistent with the FY2006 funding level. Concern was raised about a $100,000 in contracts that were added to this project that were previously provided under a NOAA Fisheries project 199302900. The budget for 199302900 was reduced to move the funding into this project. As a relative priority within the Basinwide budget, this project may have to absorb this cost. This project should receive a slight increase (5%) to their FY 2006 budget level to support increased costs.

**199602100 - Gas Bubble Disease Research & Monitoring of Juvenile Salmonids**

**Sponsor:** Columbia River Research Laboratory
**Requested FY07:** $23,946 **FY08:** $25,081 **FY09:** $26,906
**MSRT Recommended FY07:** $23,946 **FY08:** $25,081 **FY09:** $26,906
**Category:** BPA/Contract Support **Prioritization Category:** High Priority
**General comments:** This project makes an important contribution to a UPA action, but is not absolutely required for that action. The project provides training for individuals in other projects that are sampling at the dams. The training and reporting addresses OR/WA water quality gas waivers. The bio-monitoring will need to continue, but the future of this need will be based on future state water quality regulations.
**Budget comments:** This project provides training for GBD technicians throughout the basin. This should probably be a Core function for the Program and likely a UPA project for BPA. Gas bubble monitoring is required to obtain a gas waiver from the states for fish spill.

**200702500 - Project Compliance Monitoring**

**Sponsor:** XLSolutions
**Requested FY07:** $459,790 **FY08:** $459,790 **FY09:** $403,883
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** BPA/Contract Support **Prioritization Category:** Do Not Fund
**General comments:** PISCES should be able to provide project compliance monitoring for the Program as it matures.

4) Monitoring and Evaluation Coordination - Coordination of monitoring and evaluation for habitat conditions and artificial production

**200303600 - CBFWA Collaborative Systemwide Monitoring and Evaluation Program**

**Sponsor:** Columbia Basin Fish & Wildlife Authority (CBFWA)
**Requested FY07:** $1,024,245 **FY08:** $1,024,245 **FY09:** $1,024,245
**MSRT Recommended FY07:** $997,500 **FY08:** $997,500 **FY09:** $997,500
**Category:** M&E coordination **Prioritization Category:** Core Program
**General comments:** This project would be considered High Priority by several MSRT members, but all agree this project should be funded. CSMEP is accomplishing the Columbia River fish elements of the PNAMP work plan. This project has demonstrated high production and good coordination. It is likely the best program to coordinate and standardize RME and its partnership with PNAMP will assist in "marketing" standardization and agency acceptance. Comparability of data is a high priority and only CSMEP, PNAMP and a few others are collaborating to the degree necessary to ensure joint development of products and broad acceptance and future attainment of comparable and accessible data, analysis and standards.
**Budget comments:** The MSRT reduced the budget target for this project to the 2006 level. The sponsor will need to revise their proposal, to identify the priority tasks.

**200400200 - PNAMP Funding**

**Sponsor:** US Geological Survey (USGS) - Cook
**Requested FY07:** $50,000 **FY08:** $50,000 **FY09:** $50,000
**MSRT Recommended FY07:** $50,000 **FY08:** $50,000 **FY09:** $50,000
**Category:** M&E coordination **Prioritization Category:** High Priority
**General comments:** PNAMP relies on CSMEP for Columbia River fish monitoring strategies and is focused more on habitat strategies for the CRB. Both projects are well coordinated and avoid duplication of effort. This project funds a portion of the coordinator for PNAMP. Although not ranked as Core Program, this project is needed to insure regional consistency in monitoring. This was considered Core Program by the federal agencies and NPCC staff. PNAMP's workload and the expectations of its functions have increased significantly.
**Budget comments:** No comments.

**200711700 - Comprehensive Assessment of Coho Salmon Restoration Efforts in the Mid-Columbia and Mid-Snake River Basins**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $59,421 **FY08:** $65,898 **FY09:** $71,683
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** M&E coordination **Prioritization Category:** Recommended Action
**General comments:** One member stated that this is a low priority for the Upper Columbia ESU and Province.

5) Research Coordination/Support

**200728000 - Columbia River Basin Journal**

**Sponsor:** Intermountain Communications
**Requested FY07:** $105,000 **FY08:** $100,000 **FY09:** $100,000
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Research Support **Prioritization Category:** Do Not Fund
**General comments:** Some members felt this service could be provided by existing projects (i.e., StreamNet library), but it is currently not being provided as proposed here. There was disagreement among the MSRT on the value of this service. Journal publications are generally available on-line on various web sites; this proposal would bring access to those publications into one location.

6) Coordination of information dissemination

**199800401 - Columbia Basin Bulletin**

**Sponsor:** Intermountain Communications
**Requested FY07:** $150,000 **FY08:** $150,000 **FY09:** $150,000
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Information Dissemination **Prioritization Category:** Recommended Action
**General comments:** In the past, CBFWA has recommended that NPCC pay for this effort out of their public relations budget. It is a very important communication tool for the region although not a high priority for Program funding.

B. Regional Data Management

The recent completion of the Council's subbasin planning effort highlighted the need for consistency and uniformity in fish, wildlife, and habitat data management for use in monitoring and evaluation at the Columbia Basin scale. Several independent efforts to accumulate information from the subbasin assessments have been incorporated into coordinated efforts to develop standardized protocols for collection and management of data for larger regional efforts. Although the subbasin plans were useful for planning purposes at the local subbasin scale, they do not guide basinwide decision making (budget allocation and species prioritization) or provide opportunities for the "roll-up" of population specific information (comprehensive benefits). In addition there are frequent reports, for example by StreamNet, of challenges inherent in more consistent use of standards and protocols by states, tribes, and others.

Projects currently exist in the Columbia River Basin, funded by Bonneville, which provide data collection, data management, and information dissemination services. These projects address the data management issue from two perspectives from a fish and wildlife status, trends, and goals standpoint. First, a series of projects have been recently initiated to provide guidance and develop protocols for data collection to support broader monitoring and evaluation efforts within the Columbia River basin and across the Pacific Northwest. These projects were initiated, partially, in response to reviews by the Independent Science Review Panel (ISRP) and the NPCC's 2000 Fish and Wildlife Program and the 2003 Mainstem Amendment. The BPA is currently funding portions of three projects that are well coordinated and addressing the issue of common data collection and data sharing protocols. A second group of projects, funded by BPA, focus on collecting and accumulating fish and wildlife monitoring data. These projects range from on-the-ground data collection projects, to data management projects, up to basinwide reporting efforts. Through the development of FY 2007-2009 NPCC funding recommendations, the NPCC has the opportunity, with the assistance of the Mainstem Systemwide Review Team (MSRT), to build a sound suite of projects to insure that data management is well coordinated and addresses key management questions identified in the NPCC's Draft Guidance for Developing Monitoring and Evaluation as a Program Element of the Fish and Wildlife Program.

The Council's draft monitoring and evaluation plan was guided by draft high level indicators developed by the Pacific Northwest Aquatic Monitoring Partnership (PNAMP), and identified key management questions that regional reporting should begin to address in the future. These key management questions are being used to guide the FY 2007-2009 project selection process to ensure that BPA funded fish and wildlife monitoring is coordinated and targeted on key data for regional reporting.

**Existing Monitoring and Evaluation Protocols/ Guidance Projects**

Pacific Northwest Aquatic Monitoring Partnership (PNAMP)

- Formal organization that includes a Charter signed by 19 state, federal, tribal and regional entities in 2004
- Drafted "Considerations for Monitoring in Sub-basin Plans" for the Fish and Wildlife Program and completed a strategic plan (PNAMP Strategy for Coordinating Monitoring of Aquatic Environments in the Pacific Northwest) in 2005
- Implement monitoring protocol comparison projects and served as forum for coordination of monitoring across programs
- Currently conducting aquatic monitoring inventories with BPA funding in Columbia River subbasins
- Will continue to facilitate discussions among technical experts and between scientists, managers, and liaison groups for the collective evaluation and interpretation of current and new knowledge regarding issues in need of management or research attention to insure data standards and integrity among and between various monitoring programs. CSMEP is implementing the Columbia River Basin portion of the fish monitoring strategy for PNAMP

Collaborative Systemwide Monitoring and Evaluation Project (CSMEP)

- Conducted metadata inventories and identified strengths and weaknesses of fish population data for 13 Columbia River subbasins by working collaboratively with StreamNet and has developed a web accessible database for these data (this effort continues in additional subbasins)
- Developed preliminary monitoring and evaluation study designs for status and trends of fish populations and effectiveness of habitat, harvest, hydro and hatchery actions currently being implemented in the Salmon River Pilot Project
- CSMEP plans to continue to collaboratively design improved monitoring and evaluation study designs that will fill information gaps and provide better answers to key management questions in the future through multi-agency collaboration and pilot testing of study designs

Northwest Environmental Data Network (NED)

NED is a state, federal, tribal and non-profit consortium of 13 entities with an interest and commitment to developing plans and agreements and where necessary promoting technologies needed to improve the quality, quantity and timeliness of data for monitoring and other environmental programs. Development of standards for reporting and exchanging information is a part of the NED mission. The NED has initiated its web portal to disseminate metadata describing and locating monitoring data sets, completed a set of Best Practices for Reporting Location and Time Related Data, developed a solution for collecting disparate subbasin planning data and successfully completed a second workshop which helped bring various groups together to discuss how to share data once it is acquired. The CBFWA Status of the Resource Project intends to work closely with NED to establish web access protocols for the data used to generate annual reports.

The PNAMP and CSMEP projects address issues related to what data are needed, how they should be collected, and what data gaps exist that should be filled by additional sampling

programs - key aspects that are most appropriate for biologic specialists. Members of these projects are also well positioned to work with data management specialists to develop and agree on data definitions and formats across the region. The NED project, with collaboration from data collection and reporting projects, will help facilitate the efficient transfer of data between regional programs.

**Existing Monitoring and Evaluation Reporting Projects**

StreamNet

StreamNet is a data development and dissemination project that provides data related services to the Fish and Wildlife Program and the region's fish and wildlife agencies. StreamNet exists specifically to facilitate transfer of data from multiple agencies for regional use in research, monitoring, management, public education, policy and decision-making. Data are obtained from field agencies and BPA funded projects. The primary data sets are standardized to a consistent format across agencies, quality assessed, and geo-referenced. The data are made available publicly through an on-line data query system and through interactive map interfaces, accessible through the internet and metadata will be available through the NED portal. This makes data available from many agencies that are not able to make data available via the web themselves. The project has also developed an online searchable archive capable of housing data from a wide variety of sources, including BPA funded projects, and making them available over the internet. StreamNet provides indirect support to a variety of management, restoration and monitoring efforts that are designed to protect, enhance, and restore fish populations, and is an active participant in both PNAMP and NED. StreamNet performs the task of posting monitoring data from the management agencies on the internet in regionally consistent format, a function the agencies are currently not structured or tasked to do. Posting data on the internet is a prerequisite for the data to be available through any anticipated distributed database system or portal.

Fish Passage Center Functions

The Fish Passage Center functions continue to be needed, now and into the future. The monitoring and data management functions consist of mainstem fish passage data collection, data management, and internet accessibility. The project also collects and stores data for the Smolt Monitoring Program and the Gas Bubble Trauma project and other historical data sets including resident fish data. The data is available via the internet.

Data Access in Real Time (DART)

The project provides single-point, internet-based access to a subset of Columbia Basin mainstem information to guide and support BPA's independent decisions pertaining to its responsibilities under the Power Act and Endangered Species Act, as well as tools for data analysis. DART is a second tier data management project that acquires data from other data projects for display and analysis through its online tools.

Habitat and Biodiversity Information System For Columbia River Basin (IBIS)

This project operates and maintains an internet website to 1) disseminate habitat and biodiversity information for eco-provinces and subbasins, and 2) create performance tools to support subbasin and basinwide decision making. Northwest Habitat Institute staff also attends meetings (including PNAMP and NED), makes presentations, develops and hands out professional material, as well as writes peer reviewed publications about

the information and tools developed for this project. This project addresses the wildlife portion of basinwide data needs.

PIT Tag Information System (PITAGIS)
PTAGIS is the central repository for all PIT tag information for the Fish and Wildlife Program. This information is available to all entities through the internet. The PTAGIS project provides computer software that facilitates the standard data collection of mark, release and recovery information for PIT tagged fish. The Columbia Basin PIT Tag Steering Committee establishes the data collection standards and methods employed by the PTAGIS project.

Status of the Resource Project – CBFWA
The Council recently approved a within year budget modification request to support CBFWA's Status of the Resource Project. The CBFWA Status of the Resource Project will be the interactive web based interface to fish and wildlife status, trends, and goals data, and it will address the specific responsibilities such as identifying data gaps, coordinating data reporting, and making data available via the internet. The state, Tribal, and federal fish and wildlife managers will, through CBFWA, be responsible for ensuring that the important data are available, reliable and adequately documented. The project will develop, produce, and distribute an annual resource status and trends report of focal species (fish and wildlife) relative to biological objectives in subbasin plans. In addition, the project will develop (i.e., summarize existing data and analyses from existing reports and personal interviews), produce, and distribute a project implementation report that tracks and assesses the implementation and success of fish and wildlife projects funded through Fish and Wildlife Program. The primary responsibility that CBFWA brings to the data management realm is the commitment by its Members to assist in developing a regional level report of fish and wildlife data in a consistent and transparent manner through a web site and annual report. A significant portion of the fish and wildlife status and trends data necessary to provide a comprehensive data package for the basin is not funded through BPA but is the responsibility of the Tribes, and state and federal fish and wildlife management entities. The Status of the Resource website may provide the value added feature of accessing data from projects and processes outside of the Fish and Wildlife Program if managers find this to be a useful tool

Using data protocols developed by the Collaborative Systemwide Monitoring and Evaluation Project (CSMEP) and the Pacific Northwest Aquatic Monitoring Partnership (PNAMP), data collection projects will be asked to collect data that is consistent with regional needs. The BPA will be asked to enforce, through project contracting, the implementation of regionally developed data collection and reporting protocols. The data management projects should then be provided clear guidance on which data are most important to have in a uniform format, and tasked to work with NED to insure that data are accessible and available. These requirements should be met and maintained to feed into the regional reporting required to support the CBFWA Status of the Resource Project and other regional data portals available on the web.

Projects should focus on development, quality assurance, and maintenance of priority data bases and insure that data continues to be readily accessible via the internet. We support the recommendations from the recent ISRP review that called for clear direction to StreamNet on their data management activities. There is a particular interest in improving both the quality and timeliness of data from StreamNet. The NPCC should also urge BPA to require all fish and wildlife monitoring projects to make their data accessible electronically through the internet,

StreamNet or other web based portals. Metadata should be available from all BPA funded projects on the NED portal.

1) Support mainstem passage monitoring

In the May 5 MSRT draft recommendation, the MSRT recommended 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. The project sponsors for those projects met and developed a single proposal to address the fish passage monitoring functions. The sponsors followed closely the regional guidance provided in the 2003 Mainstem Amendment. The sponsors requested feedback from all interested parties to insure that the proposal addresses the regional needs identified in the 2003 Mainstem Amendment.

The MSRT recommends that all proposals in this category be subjected to the oversight by the Fish Passage Oversight Board (FPOB) as described in the 2003 Mainstem Amendment. The 2003 Mainstem Amendment should be the foundation for funding proposals that address mainstem fish passage monitoring. The FPOB should meet to discuss the proposals and insure coordination and collaboration between the project sponsors.

**199105100 - M&E Statistical Support For Life-Cycle Studies**

This proposal also addresses functions under Regional Data Management B2) Data management projects.
**Sponsor:** University of Washington
**Requested FY07:** $473,086 **FY08:** $485,492 **FY09:** $498,267
**MSRT Recommended FY07:** $414,338 **FY08:** $414,338 **FY09:** $414,338
**Category:** Fish Passage Monitoring **Prioritization Category:** Core Program
**General comments:** The project supports BPA decision making, provides in-season survival estimates, and performs monitoring and evaluation of several environmental parameters. This project should be reviewed with the Data Management projects and the analytical support projects being considered under the fish passage monitoring issue. This project provides data analysis and evaluation. This project is in the Action Agencies 2007-2009 Implementation Plan. Some members of the MSRT believe this project should be funded by NOAA.
**Budget comments:** This project provides real time analysis to support DART. It appears that this project should be rolled into a single proposal with the other DART projects. This project is providing fish passage analysis and should be held to the same standards and oversight as described in the 2003 Mainstem Amendment for fish passage monitoring. It appears that some of the tasks within the project are duplicative of other fish passage monitoring, or are solely for BPA support. Tasks within the three fish passage monitoring projects (199105100, 199601900, and 200732100) need to be well coordinated to avoid duplication. This project should receive a slight increase (5%) to their FY 2006 budget level to support increased costs.

**199601900 - Technical Management Team (TMT)**

This proposal also addresses functions under Coordination/Support A3) BPA/Contract support and Regional Data Management B6) data management projects.
**Sponsor:** University of Washington
**Requested FY07:** $597,642 **FY08:** $552,925 **FY09:** $578,067
**MSRT Recommended FY07:** $331,279 **FY08:** $277,279 **FY09:** $277,279
**Category:** Fish Passage Monitoring **Prioritization Category:** Core Program
**General comments:** This is the DART project. A portion of this proposal addresses functions formerly performed by Fish Passage Center. This proposal should be reviewed in the context of the other fish passage monitoring proposals. DART has been providing second tier data base for 14 years. The MSRT would like to review the DART functions in relation to the support they provide to BPA and others in the CRB. This project should also be reviewed with the Data Management projects.
**Budget comments:** Tasks within the three fish passage monitoring projects (199105100, 199601900, and 200732100) need to be well coordinated to avoid duplication. This project should receive a slight increase (5%) to their FY 2006 budget level to support increased costs. A one time expense of $54,000 has been included in FY 2007 for the purchase of a new server.

**200732100 - Data Management for System Operations**

**Sponsor:** Columbia Basin Fish & Wildlife Authority (CBFWA)
**Requested FY07:** $1,531,414 **FY08:** $1,531,414 **FY09:** $1,531,414
**MSRT Recommended FY07:** $1,500,000 **FY08:** $1,500,000 **FY09:** $1,500,000
**Category:** Fish Passage Monitoring **Prioritization Category:** Core Program
**General comments:** The fish and wildlife managers believe that this project may meet their needs. See February 16, 2006 FPAC memo for articulation of fish and wildlife manager needs. These functions are Core Program activities. The MSRT recommends that a group should be formed that would develop the criteria for evaluating projects to serve fish passage monitoring functions for FY 2007-2009. One member suggested incorporating this task into the CSMEP project.
**Budget comments:** The MSRT identified this proposal as best meeting the language in the 2003 Mainstem Amendment. Tasks within the three fish passage monitoring projects (199105100, 199601900, and 200732100) need to be well coordinated to avoid duplication. The Fish Passage Oversight Board needs to convene to review the three fish passage monitoring projects and provide guidance to the projects.

**200730000 - Fish Passage Technical Services Project**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $1,555,069 **FY08:** $1,602,717 **FY09:** $1,651,390
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Fish Passage Monitoring **Prioritization Category:** Fish passage monitoring
**General comments:** The fish and wildlife managers believe that this project may meet their needs. See February 16, 2006 FPAC memo for articulation of fish and wildlife manager needs. These functions are Core Program activities. The MSRT recommends that a group should be formed that would develop the criteria for evaluating projects to serve fish passage monitoring functions for FY 2007-2009.

**200732600 - Monitoring of juvenile and adult salmonid survival through the Federal Columbia River Power System**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $1,622,780 **FY08:** $1,679,576 **FY09:** $1,738,338
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Fish Passage Monitoring **Prioritization Category:** Fish passage monitoring
**General comments:** The fish and wildlife managers believe that this project may meet their

needs. See February 16, 2006 FPAC memo for articulation of fish and wildlife manager needs. These functions are Core Program activities. The MSRT recommends that a group should be formed that would develop the criteria for evaluating projects to serve fish passage monitoring functions for FY 2007-2009.

**200728700 - Delivering Reliable Fish Passage Information for Hydrosystem Management**

**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $537,283 **FY08:** $497,028 **FY09:** $507,119
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Fish Passage Monitoring **Prioritization Category:** Fish passage monitoring
**General comments:** The fish and wildlife managers believe that this project would not address their needs.

**200738800 - Fish Passage Data System (Key Functions Previously Performed by the Fish Passage Center)**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $890,189 **FY08:** $925,797 **FY09:** $962,828
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Fish Passage Monitoring **Prioritization Category:** Fish passage monitoring
**General comments:** The fish and wildlife managers believe that this project would not address their needs because there is no mechanism for real time delivery of products.

2) Data management projects

The following projects address regional data management needs. The MSRT anticipates a workshop or meeting involving the StreamNet steering committee, other core program project sponsors, and regional managers to define StreamNet's and other database managers' 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 non-tagging fish data to StreamNet or other data management entities, consequently, it appears that there may be substantial non-reporting of fish data to these databases by data collection projects funded by BPA. Input to the Council's M&E Framework could help define information needs for regional data management, an ISRP Retroactive Report recommendation.

**198810804 - StreamNet (CIS/NED)**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**FY07:** $2,901,154 **FY08:** $3,040,961 **FY09:** $3,198,011
**MSRT Recommended FY07:** $2,500,000 **FY08:** $2,500,000 **FY09:** $2,500,000
**Category:** Data Mgmt **Prioritization Category:** Core Program
**General comments:** A StreamNet project is a Core Program need. The MSRT is not certain that this is the core StreamNet project that is needed. There are four additional StreamNet proposals related to CSMEP, harvest, hatchery, and habitat project data which need to be considered in addition to this core project. StreamNet's role and functions need be defined within an M&E framework for the Program. The project has requested guidance on priorities for data types needed by the Program. The MSRT anticipates a workshop or meeting involving the StreamNet steering committee and regional managers to define StreamNet's role and functions for FY 2007-2009. We do not have a specific recommendation to make that happen. Some ideas include discussions at the upcoming NED workshop, Remand RME workgroup, CSMEP, and others. There is currently not a requirement in BPA contracts to report non-tagging fish data to StreamNet. It appears that there may be substantial non-reporting of fish data to StreamNet by data collection projects funded by BPA. Input to the Council's M&E Framework

could help define information needs for regional data management (ISRP Retrospective Report recommendation).

**Budget comments:** StreamNet and IBIS should be well coordinated. This project should be coordinated with the Data Management Placeholder, in case additional funding is required. Any discussions of a regional data center should also occur in the context of the data management proposals. CBFWA should host a workshop to develop priorities for the data management projects.

For the funding period FY 2007-2009, the MSRT recommends that StreamNet focus on developing a hierarchical geographic data structure that directly supports subbasin planning information and Columbia Basin recovery planning. An emphasis should be placed on assisting data collectors (generally fish and wildlife managers) with tools for making their data standardized, consistent, and web-accessible through the StreamNet website or through distributed data systems. The data framework should be organized at the fish population scale, with an emphasis on population abundance and trend data. It is not anticipated that StreamNet would perform any secondary data analysis. The primary focal species for the purpose of regional reporting should be consistent with those identified in the NPCC's subbasin plans. For each of the populations, StreamNet should build the capacity to provide access to the data types identified in Table 2 either on the StreamNet web site or through distributed data access. A workshop involving CBFWA, the management agencies, regional data users, and StreamNet staff is needed to finalize these preliminary priorities and to determine how far down the priority list is feasible on available funding. StreamNet should continue to work with PNAMP, CSMEP, and NED to insure consistent implementation of data standards and protocols.

StreamNet should continue to provide data related services to support and improve efficiency of data capture and management within the management agencies; to respond to data needs from management agencies, the FWP and regional-scale entities (e.g., universities, NOAAF, FWS, etc.); and to disseminate information on data sources and fish and wildlife literature through the StreamNet Library.

StreamNet should work closely with the CBFWA Status of the Resource Project to help obtain access to information needed by that project. That effort will help scope the scale and depth of information available in the region, and identify data gaps in the regional data framework. StreamNet should also begin working with a select group of projects within the Fish and Wildlife Program to develop methods and tools to efficiently transfer information from BPA funded projects to the StreamNet database, or assist in making their data web accessible. Generally, the highest priority should be placed on projects that capture data necessary to estimate VSP parameters (abundance, productivity, diversity, spatial structure) as used by the NOAA Technical Recovery Teams.

In order to help facilitate restructuring the StreamNet project, CBFWA should be used to facilitate workshops to align the biologists with the data managers within the fish and wildlife management agencies to more clearly define the specific data requirements that StreamNet and IBIS will be expected to provide.

**200307200 - Habitat and Biodiversity Information System For Columbia River Basin**

**Sponsor:** Northwest Habitat Institute

**Requested FY07:** $997,107 **FY08:** $1,068,287 **FY09:** $1,030,199

**MSRT Recommended FY07:** $440,000 **FY08:** $440,000 **FY09:** $440,000

**Category:** Data Mgmt **Prioritization Category:** Core Program

**General comments:** Significant increase in proposed budget should be evaluated against regional needs. Guidance for this project should be included in the StreamNet discussions. This project focuses on habitat information. One member expressed a desire for improvements in data accuracy and better technology for query and data acquisition.

**Budget comments:** IBIS should be closely coordinated with StreamNet. This project should be coordinated with the Data Management Placeholder, in case additional funding is required.

Any discussions of a regional data center should also occur in the context of the data management proposals. CBFWA should host a workshop to develop priorities for the data management projects.
The MSRT recommends that the IBIS proposal be limited to providing hierarchical mapping of wildlife habitats to support future subbasin planning and to be included in the CBFWA Status of the Resource Project. If funding allows, the IBIS project should also develop spatial distributions of wildlife species and described in their proposal. The data collected through this project should be closely coordinated with CBFWA and NED to provide regional access and availability. CBFWA should be used to facilitate workshops to align the biologists with the data managers within the fish and wildlife management agencies to more clearly define the specific data requirements that StreamNet and IBIS will be expected to provide.

**199008000 - Columbia Basin Pit-Tag Information System.**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $2,531,577 **FY08:** $2,692,839 **FY09:** $2,800,553
**MSRT Recommended FY07:** $2,500,000 **FY08:** $2,500,000 **FY09:** $2,500,000
**Category:** Data Mgmt **Prioritization Category:** Core Program
**General comments:** No comments.
**Budget comments:** Funding for PTAGIS should average $2.5M over the next three years. If additional studies are approved that impact PTAGIS's budget, that cost should be borne by the project requesting support.

**200725400 - StreamNet Support and Services for Conservation and Recovery Data Needs**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $155,818 **FY08:** $163,609 **FY09:** $171,789
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Data Mgmt **Prioritization Category:** see StreamNet comments
**General comments:** Include in StreamNet review.

**200731300 - Expanded Acquisition and Display of Fish (Initially Anadromous Salmonids) Harvest Data in the StreamNet Database**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $148,844 **FY08:** $156,287 **FY09:** $164,201
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Data Mgmt **Prioritization Category:** see StreamNet comments
**General comments:** Include in StreamNet review.

**200731400 - Regional Consolidation of Habitat Restoration Project Information From Multiple Funding Sources with Dissemination Through the StreamNet Website**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $238,514 **FY08:** $250,440 **FY09:** $262,964
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Data Mgmt **Prioritization Category:** see StreamNet comments
**General comments:** Include in StreamNet review.

**200732700 - Compilation of Location-Specific Hatchery Release Data in Consistent Format Across Agencies by StreamNet**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $192,720 **FY08:** $202,356 **FY09:** $212,474
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Data Mgmt **Prioritization Category:** see StreamNet comments
**General comments:** Include in StreamNet review.

**200704700 - Hydrography Spatial Data Enhancement Project - WDFW & WDNR Operational Data Updates and Integration to the PNW Hydrography Clearinghouse for the WA Columbia Basin**

**Sponsor:** Interagency Committee (IAC)
**Requested FY07:** $606,879 **FY08:** $477,786 **FY09:** $261,511
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Data Mgmt **Prioritization Category:** High Priority
**General comments:** The Regional Hydro clearinghouse is used by GIS analysts for supporting management decisions. This data is not specific for fisheries management needs. If BPA funds this project, appropriate cost share should be pursued. This project should be included in the StreamNet/database review discussion.
**Budget comments:** The MSRT adopted a principal that ISRP Not Fundable proposals were not going to be included in the budget balance exercise.

**200720000 - Idaho Subbasin Planning and Comprehensive Wildlife Conservation Strategy (CWCS) Data Distribution System**

**Sponsor:** Idaho Department of Fish & Game
**Requested FY07:** $139,489 **FY08:** $146,464 **FY09:** $153,787
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Data Mgmt **Prioritization Category:** Recommended Action
**General comments:** There may be duplication with other data management projects. Consideration of this project should be made in the discussion of StreamNet role and function. BPA responsibility should also be considered. The project calls for coordination to insure consistency with regional needs and eventual data portal. More groundwork may be necessary before funding the project.

**200700900 - A Spatially Explicit & Web-accessible Database for Managing the Impacts of Expanding Colonial Waterbird Populations on Juvenile Salmonids (Oncorhynchus spp.) in the Columbia River Basin**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $102,930 **FY08:** $52,930 **FY09:** $29,273
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Data Mgmt **Prioritization Category:** Do Not Fund
**General comments:** This could be accomplished through existing projects, likely at a reduced cost.

**200723800 - Providing Services to Assist Record Keeping of Over the Bank Sales in Zone 6 Tribal Fisheries**

**Sponsor:** Steven Vigg & Company
**Requested FY07:** $74,027 **FY08:** $74,027 **FY09:** $74,026
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Data Mgmt **Prioritization Category:** Do Not Fund
**General comments:** No comments.

**200735200 - Feasibility Study and Implementation of a System-wide Conservation Enforcement Web-Based Data Center**

**Sponsor:** Steven Vigg & Company
**Requested FY07:** $163,090 **FY08:** $102,290 **FY09:** $92,489
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Data Mgmt **Prioritization Category:** Do Not Fund
**General comments:** No comments.

**Table 2.** List of data types in preliminary priority tiers for StreamNet in FY 2007-2009. These data types include data that StreamNet already provides plus additional types of data that could be provided if directed and supported to do so. Priority rankings are intended as a starting point for discussion, and have not yet been circulated among the various groups of users of StreamNet-provided data.

| Priority Group | Data Type | Current Status |
|---|---|---|
| 1 | Adult Abundance of priority anadromous and resident fish:<br>Redd counts<br>Carcass counts<br>Trap counts<br>Dam counts<br>Weir counts<br>etc. | Currently a base data type. There are multiple sub data types in this category already. Are there additional abundance data types that could be added? IDFG has requested greater detail for redd count data. |
| 1 | Adult Abundance – calculated<br>Estimated escapement<br>Recruitment to life state estimates?<br>Other calculated estimates?? | Estimated spawner populations are currently a base data type. Are there other estimates that should be captured? |
| 1 | Juvenile Data (abundance and outmigration) of priority anadromous and resident fish:<br>Smolt trap data<br>Population survey data | Some preliminary work has been done on this data type. This category would include at least two sub types: smolt trap data and fish abundance survey data. |
| 1 | Age (obtained from spawning ground surveys, hatchery returns, etc.) | Currently a base data type, but under development and not complete. New data exchange format is complete. Are in process of gathering data and testing effectiveness of data structure. |
| 1 | Production factors and run reconstruction.<br>Posting of estimates made by biologists within the management agencies.<br>Capture and posting the raw data necessary to do the estimates (details needed from the biologists) | Proposed. This category could include the raw data needed to conduct run reconstructions, and it could also include results of run reconstructions. Regional guidance is desired on just what is wanted. (These data are identified in the Group 1 and Group 2 priority categories in this table. Coordinate other possible data elements through CSMEP) |
| 1 | Stock-specific Harvest (when available)<br>Marine<br>Sport<br>Commercial<br>Freshwater<br>Sport<br>Commercial | Currently, harvest data are only partially captured. Consolidating all harvest data would be a larger task, and extra funding has been requested in a separate proposal if this is seen as a regional priority. The new effort would include marine and freshwater, sport and commercial. (These estimates should be captured from technical harvest management groups, as available. Harvest data was in a separate proposal.) |
| 2 | Hatchery Releases (anadromous) | Currently in transition. In past, posted as rolled up to PSC codes. We propose (in a separate proposal) to provide release data by individual stocking location and time. |
| 2 | Hatchery Returns (anadromous) | Currently a base data type |

| | | |
|---|---|---|
| 2 | Hatchery fraction of spawners on spawning grounds. (coordinate this effort with CSMEP and PNAMP) | Potential. Data would be obtained from spawning ground surveys, where recorded by the management agencies |
| 2 | Anadromous Distribution and Life History (Use) | Currently a base data type. As the agency biologists update distribution data, we will capture and post |
| 3/1 | Resident Game Fish Distribution and Life History (Use) | Currently a base data type and the most often accessed data type. Currently limited to a few game and/or listed species. As the agency biologists develop distribution data for other species, we could capture and post. (Within this priority category, address bull trout and redband trout data first.) Priority 1 in Montana. |
| 3 | Sightings / Observations<br>(Does not include time-series information, which is captured elsewhere) | We recently defined this and are beginning development of a data structure. Should be able to handle all aquatic taxa. StreamNet partner agencies have much information on where species are documented to occur. This will also be a place to record new observations of occurrence, especially when the observation is incidental to the purpose of the sampling. This would also be a place to house information on observations of invasive species while doing other fish sampling. We should also open up discussions with various university museum collection curators to capture their wealth of information and assist with data sharing between them also. |
| 3 | Hatchery transfers (Initial development) | Potential. Details of movement of eggs, young, and adults between hatcheries. We are told this is possible and of interest, but it is very labor intensive. (Possibly work with one willing hatchery manager to design an electronic hatchery records system which would capture this, and other, information efficiently.) |
| 3 | Habitat (stream fish habitat)<br>Many specific variables (Initial development only for 07-09) | Potential. Habitat data could be obtained from multiple sources. Regional agreement is needed on what components are most important to include. Design a strategy for capturing and updating in-channel and riparian habitat information necessary for the next round of subbasin assessments. Use the last subbasin assessments as a guide to the type of information needed. |
| 4 | Macro-invertebrates. | Potential. We have a prototype data structure, but the DEQ's may be more interested in doing this. |
| 4 | Water temperature | Potential, based on previous work where we developed a data structure. This was proposed because a lot of field agencies collect temperature data but they are not included in DEQ/DOE or EPA databases. Logically, DEQ's should do this, but are they interested? |

| | | |
|---|---|---|
| 4 | Populations (status and delineation) | Potential. If desired, we would pull together information on formal population status designations (e.g., Threatened, Listed, Proposed, Candidate, Sensitive, "Blue Ribbon", or any other specific designation relative to a given population under federal or state programs). Some populations will have multiple status designations. |
| 4 Higher? | Diversions and Screening (some advocate a higher priority) | Preliminary work has been done on a data format for these data, with some preliminary data already obtained. Additional technician time will be needed to do this for all states. This is a high priority data set, but lower priority for regional standardization. (Note: could be combined with Barriers and Dams to form an "in-stream structures" data type.) |
| 4 Higher? | Barriers (includes natural, dams, culverts, etc.) (some advocate a higher priority) | Currently a base project, but data are not yet comprehensive. Additional technician time is being requested to locate and obtain barrier data of many types (culverts, irrigation diversions, other) from new and old sources. Also will capture information on species affected, impact to migration by life stage, etc. This data type will require ongoing update as new barriers are identified and as artificial barriers are modified or removed. This is a high priority data set, but lower priority for regional standardization. (Note: could be combined with Diversions & screening and Dams to form an "in-stream structures" data type.) |
| 5 | Hatchery Releases (resident) | Potential. |
| 5 | Genetics (expansion to additional states in addition to Montana) | Currently a base data type for Montana only. The proposal is to expand capture of genetics data to other states. This should remain a high priority for Montana. |
| 5 | Hatchery Facilities | Currently a base data type. |
| 5 | Dams and Fish Passage Facilities | Currently a base data type. Better location data needed on some dams. Need to expand capture of dams that do not have other data tied to them. |
| 5 | Carcass Placement. | Under development. Waiting for direction on whether it is important to consolidate information on where enhancement with carcasses is taking place. Also, are there other fertilization efforts that should also be tracked? |
| 6 | Resident Non-game Fish Distribution and Life History (Use) | Potential. This is important to the non-game biologists, particularly in relationship to the Comprehensive Wildlife Strategies plan for each state. |
| 6 | Habitat Restoration/Improvement Projects | A separate proposal was submitted to consolidate project data from all sources. We have done prototype work, and have a comprehensive database structure that would be used to consolidate |

| | | |
|---|---|---|
| | | data from PRISM, OWEB, FS/BLM, PCSRF and other sources. A prototype data set is presented on the StreamNet website as a proof of concept, but the output format is not yet adequate. Staff time is needed to locate, capture, translate, and input all of this data from many sources. To our knowledge, no one else is doing this on a comprehensive basis, certainly not as an ongoing annual process. There may be a NOAAF effort planned, but full intent and longevity are unknown at this time. |
| 6 | Protected Areas Data (conversion to NHD) | Future. At some point the protected areas list should be updated to a standard hydrography. However, that time is not until 24-K NHD is settled. This is likely a couple of years off. To do this work, we will want to hire dedicated technicians to go through all the paper copies and tie the records to the new 24K NHD hydrography. This would be superseded by any Council effort to update the Protected Areas list. |
| 6 | Smolt Density Model Data (conversion to NHD) | Future. At some point, the Smolt Density Model data could be updated to a standard hydrography when the 24K NHD is completed (in several years). This might be superseded by any future modeling work. |

## II. Monitoring and Evaluation

A) High level indicators

**200717600 - A Freshwater Mussel Watch for Biomonitoring in the Columbia River Basin**

This proposal also addresses functions under VII.) Mussels.
**Sponsor:** Confederated Tribes of the Umatilla Indian Reservation
**Requested FY07:** $276,971 **FY08:** $313,691 **FY09:** $302,043
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 1 **Prioritization Category:** Recommended Action
**General comments:** This project addresses a habitat monitoring question, how should we be monitoring water quality and should we use a suite of species for establishing biological indices? What other entities have water quality M&E responsibility and how should they be coordinated/partnered with for common data needs? Should we use a suite of species for establishing indices? This project would sample one subbasin in each state. There is a direct link to salmon in that they are the intermediate host for mussels. Level of FCRPS responsibility?

B) Salmon and Steelhead population status, trends and survival

1) Chinook Viability Analysis

**200725300 - Monitoring of Adult Abundance and Spatial Distribution for Snake River Spring/Summer Chinook Salmon ESU Populations**

**Sponsor:** Nez Perce Tribe / Idaho Department of Fish and Game
**Requested FY07:** $505,083 **FY08:** $458,274 **FY09:** $365,394
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 1 **Prioritization Category:** High Priority

**General comments:** This proposal raises the question of how much monitoring we require and intend to perform across the basin and how to distribute that monitoring.
**Budget comments:** This is an important project, but under the current funding environment this new start project should be delayed until additional funding is identified. This may be an important project for recovery monitoring and BiOp implementation monitoring.

**200728100 - Washington Salmonid Abundance and Productivity Monitoring Framework**

This proposal also addresses functions under Monitoring and Evaluation B2) Steelhead Viability Analysis.
**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $512,000 **FY08:** $334,000 **FY09:** $364,000
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 1 **Prioritization Category:** High Priority
**General comments:** It appears that this project is well coordinated with existing CSMEP and PNAMP processes. The amount of monitoring, and the location of that monitoring, will have to be evaluated as a package. Some MSRT members are hesitant to rank these proposals until the monitoring framework is established to be able to have a defined regional monitoring need, evaluate gaps, and compare and prioritize the monitoring projects against each other. One member stated that this effort needs to have dedicated ESA funding and be a joint tribal, federal, and state initiative.
**Budget comments:** The MSRT adopted a principal that ISRP Not Fundable proposals were not going to be included in the budget balance exercise. This is an important project, but under the current funding environment this new start project should be delayed until additional funding is identified. This may be an important project for recovery monitoring and BiOp implementation monitoring.

**200735300 - Quantitative and effective analysis of Columbia River Chinook salmon (Oncorhynchus tshawytscha) and steelhead (O. mykiss) population viability.**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $155,531 **FY08:** $145,380 **FY09:** $145,380
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 1 **Prioritization Category:** Recommended Action
**General comments:** With the significant investment we are expending in collecting data, this project could help in interpreting important parts of that data.

2) Steelhead Viability Analysis

**200735300 - Quantitative and effective analysis of Columbia River Chinook salmon (Oncorhynchus tshawytscha) and steelhead (O. mykiss) population viability.**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $155,531 **FY08:** $145,380 **FY09:** $145,380
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 1 **Prioritization Category:** Recommended Action
**General comments:** With the significant investment we are expending in collecting data, this project could help in interpreting important parts of that data.

3) Run Reconstruction/Action Effectiveness (Multiple Hs)

**198201301 - Coded-Wire Tag Recovery**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $2,783,640 **FY08:** $2,894,985 **FY09:** $3,010,785
**MSRT Recommended FY07:** $2,130,195 **FY08:** $2,130,195 **FY09:** $2,130,195
**Monitoring component:** 1, 3a, 4a **Prioritization Category:** Core Program
**General comments:** A new task has been added to include sampling for PIT tags while

sampling for CWTs. There has been a significant increase in budget that cannot be explained by the addition of sampling wands. A budget review should be performed prior to funding. One MSRT member questions the usefulness of the additional PIT tag interrogation task. Many or most fish sampled would likely be cleaned and missing PITs. Individual tag information or expansions from tag data may only produce "interesting" information.
**Budget comments:** The MSRT recommends funding the CWT projects at their FY2006 level plus a 5% increase for increased costs. The PIT tag sampling is not a high priority for the MSRT.

**198201302 - Annual Stock Assessment - Coded Wire Tag Program (ODFW)**

**Sponsor:** Oregon Department of Fish & Wildlife (ODFW)
**Requested FY07:** $245,680 **FY08:** $250,593 **FY09:** $255,604
**MSRT Recommended FY07:** $228,775 **FY08:** $228,775 **FY09:** $228,775
**Monitoring component:** 1, 3a, 4a **Prioritization Category:** Core Program
**General comments:** see 198201301
**Budget comments:** The MSRT recommends funding the CWT projects at their FY2006 level plus a 5% increase for increased costs.

**198201303 - Coded Wire Tag - USFWS**

**Sponsor:** US Fish & Wildlife Service (USFWS)
**Requested FY07:** $115,538 **FY08:** $121,315 **FY09:** $127,987
**MSRT Recommended FY07:** $115,538 **FY08:** $115,538 **FY09:** $115,538
**Monitoring component:** 1, 3a, 4a **Prioritization Category:** Core Program
**General comments:** see 198201301
**Budget comments:** The MSRT recommends funding the CWT projects at their FY2006 level plus a 5% increase for increased costs.

**198201304 - Coded Wire Tag - WDFW**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $386,607 **FY08:** $389,092 **FY09:** $412,992
**MSRT Recommended FY07:** $335,094 **FY08:** $335,094 **FY09:** $335,094
**Monitoring component:** 1, 3a, 4a **Prioritization Category:** Core Program
**General comments:** see 198201301
**Budget comments:** The MSRT recommends funding the CWT projects at their FY2006 level plus a 5% increase for increased costs.

C) Bull Trout Monitoring Strategy

There is several bull trout monitoring projects proposed here that provide good coverage of the basin. Other bull trout monitoring projects are proposed in the local subbasin 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, the additional research activities in some of the bull trout projects are a lesser priority.

The final MSRT recommendation provided here is based on tight coordination between the projects and other existing bull trout efforts ongoing in the basin.

**199405400 - Migratory Patterns, Structure, Abundance and Status of Bull Trout Populations in Subbasins of the Columbia Gorge, Columbia Plateau and Blue Mountain Provinces**

**Sponsor:** Oregon Department of Fish & Wildlife (ODFW)
**Requested FY07:** $466,260 **FY08:** $460,337 **FY09:** $453,849

**MSRT Recommended FY07:** $367,500 **FY08:** $367,500 **FY09:** $367,500
**Monitoring component:** 1 **Prioritization Category:** Core Program
**General comments:** There is several bull trout monitoring projects proposed here that provide good coverage of the basin. Other bull trout monitoring projects are proposed in the local subbasin 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, the additional research activities in some of the bull trout projects are a lesser priority.
**Budget comments:** There are two unresolved issues with the bull trout projects. First, the tie to the FCRPS Bull Trout BiOp and FCRPS responsibility. Second, coordination with USCOE bull trout projects would be expected and cost savings should be identified.
To be consistent with other mainstem/systemwide recommendations, the project budget was cut to the FY06 level of $350,000 plus a 5% increase for increased costs (The FY06 budget that totaled approximately $488,000 included efforts implemented by the Warm Springs Tribe at a cost of approximately $125,000. Those efforts are no longer part of this project but instead have been proposed through Proposal 200715700.) The MSRT recommends that the budget for this project be reduced through deferral of equipment purchases and reduction in subcontracts to USFS and USGS. Development of a bull trout monitoring plan should be completed through CSMEP and not individual projects; therefore, costs associated with developing the monitoring plan can be eliminated because this effort should be implemented through funds that ODFW receives to participate in CSMEP.

**200703300 - Monitor sub adult and adult bull trout passage through Lower Granite, Little Goose and Lower Monumental juvenile bypass facilities.**

**Sponsor:** US Fish & Wildlife Service (USFWS)
**Requested FY07:** $141,912 **FY08:** $113,729 **FY09:** $120,090
**MSRT Recommended FY07:** $116,412 **FY08:** $116,412 **FY09:** $116,412
**Monitoring component:** 1, 2c **Prioritization Category:** Core Program
**General comments:** There is several bull trout monitoring projects proposed here that provide good coverage of the basin. Other bull trout monitoring projects are proposed in the local subbasin 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, the additional research activities in some of the bull trout projects are a lesser priority.
**Budget comments:** There are two unresolved issues with the bull trout projects. First, the tie to the FCRPS Bull Trout BiOp and FCRPS responsibility. Second, coordination with USCOE bull trout projects would be expected and cost savings should be identified.
The MSRT views this proposed work as a key project to evaluate reports that bull trout are using the reservoirs and also are passing though the FCRPS facilities. The success of this project will depend on the region's ability to tag a large number of fish. This project will distribute 3000 tags to managers in Idaho, Washington, and Oregon that are conducting fisheries surveys (surveys included in this group include efforts proposed through Proposal 200714600) in this particular region. Project sponsors have indicated that the $18,000 requested for the vehicle is no longer needed. The MSRT recommends deferring the genetic analysis task to a later date; however, tissue samples should be collected and archived.

**200714600 - Bull Trout Population Status Monitoring in the Snake River Basin of Southeast Washington**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $129,372 **FY08:** $129,991 **FY09:** $125,590

**MSRT Recommended FY07:** $90,000 **FY08:** $90,000 **FY09:** $90,000
**Monitoring component:** 1 **Prioritization Category:** Core Program
**General comments:** There is several bull trout monitoring projects proposed here that provide good coverage of the basin. Other bull trout monitoring projects are proposed in the local subbasin 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, the additional research activities in some of the bull trout projects are a lesser priority.
**Budget comments:** There are two unresolved issues with the bull trout projects. First, the tie to the FCRPS Bull Trout BiOp and FCRPS responsibility. Second, coordination with USCOE bull trout projects would be expected and cost savings should be identified.
The MSRT views this as an important project because it provides support to Proposal 200703300 by PIT tagging bull trout in Snake River reservoir tributaries. Three subbasins are included in this study. The USCOE currently provides funds to PIT tag bull trout in the Tucannon Subbasin; however, no funds are provided for efforts in the Grande Ronde nor Asotin subbasins. The MSRT recommends efforts associated with this project be focused on the Grande Ronde and Asotin subbasin. The MSRT recommends that the following tasks not be funded at this time:
Bull trout movements in the Tucannon River – Funded by USCOE, Comprehensive monitoring and evaluation – Development of a bull trout monitoring plan should be completed through CSMEP and not individual projects (costs associated with developing the monitoring plan can be eliminated because this effort should be implemented through funds that WDFW receives to participate in CSMEP), and DNA analysis - deferred to a later data; however, tissue samples should be collected and archived.

**200722300 - Genetic characteristics and movement patterns of bull trout populations between Chief Joseph and McNary Dams, within the Columbia Cascade and Columbia Plateau Provinces**

**Sponsor:** US Fish & Wildlife Service (USFWS)
**Requested FY07:** $400,298 **FY08:** $404,786 **FY09:** $395,429
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 1 **Prioritization Category:** High Priority
**General comments:** There is several bull trout monitoring projects proposed here that provide good coverage of the basin. Other bull trout monitoring projects are proposed in the local subbasin 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, the additional research activities in some of the bull trout projects are a lesser priority.
**Budget comments:** The MSRT adopted a principal that ISRP Not Fundable proposals were not going to be included in the budget balance exercise.

**200729700 - Effect of Elevated Water Temperature and Gas Supersaturation on Bull Trout Reproduction and Growth.**

**Sponsor:** Abernathy Fish Tech. Center
**Requested FY07:** $138,396 **FY08:** $157,998 **FY09:** $158,158
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Recommended Action
**General comments:** The MSRT is not certain that a laboratory study to evaluate these survival parameters is appropriate. It is also not clear that results of this study would guide management action. This research project is grouped with other bull trout projects for context.

D) Hydro system status & trend
E) Hydro action effectiveness
1) Chum Salmon (adults)

**199900301 - Evaluate Spawning of Fall Chinook and Chum Salmon Just Below the Four Lowermost Mainstem Dams**

*This project is included in the Multi-province budget category.*
**Sponsor:** Oregon Department of Fish & Wildlife (ODFW)
**Requested FY07:** $1,183,925 **FY08:** $1,216,893 **FY09:** $1,263,378
**MSRT Recommended FY07:** $779,586 **FY08:** $779,586 **FY09:** $779,586
**Monitoring component:** 1, 2a, 2b **Prioritization Category:** Core Program
**General comments:** This project establishes operating criteria for maintaining flows below Bonneville for redd distribution. There was some discussion that USACE versus BPA responsibility should be visited for this project. Chum portion of the project is Core Program; some members of the MSRT felt that the fall Chinook portion may be High Priority. This project is coordinated with project number 200303800, evaluating mainstem spawning habitat in the Snake River.
**Budget comments:** The MSRT recommends that the project sponsors for this project prioritize the tasks within this proposal to meet the budget recommendation. The Core Program work within this project is the chum redds mapping and monitoring which guides system operations at Bonneville Dam and the Chinook surveys below the lower Columbia River dams.

2) Fall Chinook and Steelhead
a- Juvenile Studies

**198712700 - Smolt Monitoring By Non-Federal**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $2,345,710 **FY08:** $2,436,778 **FY09:** $2,550,951
**MSRT Recommended FY07:** $2,351,730 **FY08:** $2,351,730 **FY09:** $2,351,730
**Monitoring component:** 2a, 2b, 2c **Prioritization Category:** Core Program
**General comments:** This project coordinates and collects core data for real time smolt passage estimates.
**Budget comments:** The MSRT recommends funding the SMP project at the FY2006 level plus a 5% increase for increased costs.

**199302900 - Survival Estimates for the Passage of Juvenile Salmonids Through Snake and Columbia River Dams and Reservoirs**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $1,688,376 **FY08:** $1,739,026 **FY09:** $1,791,197
**MSRT Recommended FY07:** $1,688,376 **FY08:** $1,739,026 **FY09:** $1,791,197
**Monitoring component:** 1, 2a, 2b, 2c **Prioritization Category:** Core Program
**General comments:** This project is coordinated with project number 19960200. The pair-trawl portion of this project takes place in the Lower Columbia River and helps document survival of PIT-tagged smolt through Bonneville Dam and the estuary.
**Budget comments:** The MSRT recommends funding this project at its requested levels. The reduction from 2006 funding level is due to removal of UW statistical support (moved to UW statistical support proposals).

**199602000 - Pit Tagging Spring/Summer Chinook**

**Sponsor:** Columbia River Fisheries Program Office
**Requested FY07:** $1,757,000 **FY08:** $1,788,425 **FY09:** $1,831,615
**MSRT Recommended FY07:** $1,365,000 **FY08:** $1,365,000 **FY09:** $1,365,000
**Monitoring component:** 1, 2a, 2b, 2c **Prioritization Category:** Core Program

**General comments:** This is the Comparative Survival Study (CSS). All hatchery fish are marked through this study and substantial numbers of wild fish. This project coordinates their tagging with 199302900 to insure efficiency. These two projects work together. The increase in budget supports marking Steelhead. The fish and wildlife managers have consistently recommended adding steelhead to this project in the past.
**Budget comments:** An increase in this budget responds to Council, fish and wildlife managers, ISAB and ISRP requests for the addition of steelhead in the sampling design. Also, with the CBFWA assuming administration of the fish passage functions proposal, a reduction in the budget of approximately $400,000 could occur. This recommendation assumes successful implementation of Project Number 200732100.

**200733300 - Timing and survival of PIT tagged juvenile fall Chinook from the Hanford Reach.**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $151,659 **FY08:** $148,120 **FY09:** $151,214
**MSRT Recommended FY07:** $151,659 **FY08:** $148,120 **FY09:** $151,214
**Monitoring component:** 1, 2a, 2b, 2c **Prioritization Category:** High Priority
**General comments:** This project would cost share with existing projects to PIT tag Fall Chinook in the Hanford Reach for survival rates and SARs. Possible budget reductions if PIT tag costs were covered in other project(s). This is the last healthy component of mainstem spawners and there is not currently a long term tagging effort in place for this keystone stock. One member suggested cost share by Pacific Salmon commission, since much of the impact on this stock is by Alaska and Canadian fisheries.
**Budget comments:** The MSRT believes that the benefits received compared to the proposed costs, makes this project a higher priority.

b- Adult Studies

**200500200 - Operation of the Lower Granite Dam Adult Trap**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $283,220 **FY08:** $291,717 **FY09:** $300,469
**MSRT Recommended FY07:** $283,220 **FY08:** $291,717 **FY09:** $300,469
**Monitoring component:** 1, 2a, 3a, 4a **Prioritization Category:** Core Program
**General comments:** USACE relies on this project for data. The USACE also pays for maintenance costs of the trap. Information from this project is critical for evaluating hydro and hatchery survival as well as collecting bloodstock for BPA funded hatcheries.
**Budget comments:** The MSRT recommends funding the project at its requested budget levels; but the MSRT recommends that BPA and the NPCC pursue USCOE funding for this project in the future.

**200701400 - Stock specific run timing and upstream migration mortality of adult Chinook and sockeye salmon and steelhead through PIT tagging and genetic analyses at Bonneville Dam.**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $318,986 **FY08:** $314,300 **FY09:** $334,609
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 1, 2a **Prioritization Category:** Recommended Action
**General comments:** Possible budget reductions through elimination of PIT tags in spring Chinook. This project proposes to identify stock specific run timing and structure differences that may allow greater precision in Zone 6 harvest management to avoid imperiled stocks. CRITFC views this project as a High Priority.

**200725800 - Development of reliable ESU-specific estimates of escapement, harvest, and straying for adult anadromous salmonids migrating through the Federal Columbia River Power System.**

**Sponsor:** University of Idaho
**Requested FY07:** $938,732 **FY08:** $958,585 **FY09:** $979,035
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 1 **Prioritization Category:** Recommended Action
**General comments:** This is an alternative sampling methodology from PIT tags for estimating escapement through the hydrosystem. The intent of the project overlaps with existing studies. It is unlikely that radio telemetry data could be used to estimate harvest information as the sponsor suggests.

F) Habitat (mainstem & tributary) status and trend
G) Habitat (mainstem & tributary) action effectiveness
Do we need more monitoring beyond the intensively monitored watersheds?

**200301700 - Integrated Status and Effectiveness Monitoring Program (ISEMP): The design and evaluation of monitoring tools for salmon populations and habitat in the Interior Columbia River Basin.**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $3,950,858 **FY08:** $4,520,935 **FY09:** $4,749,337
**MSRT Recommended FY07:** $2,982,000 **FY08:** $2,982,000 **FY09:** $2,982,000
**Monitoring component:** 1, 5a, 5b **Prioritization Category:** High Priority
**General comments:** This project began in the Wenatchee subbasin and has grown to several intensively monitored watersheds. The total project lifetime cost for this project will total more than $60M. Are these the subbasins and is this the effort that the region wants to invest in? This project must be included in the discussion of where to prioritize monitoring for the Program. On member expressed concern that products for management decisions have not been in proportion to costs for this project.
**Budget comments:** The MSRT recommends that the project sponsor revisit their scheduling for this project and adjust the sequence to fit within a reduced budget. Also, the project could reduce the amount of restoration actions and target actions being funded by BPA in similar areas within the proposed subbasins. This project should receive a slight increase (5%) to their FY 2006 budget level to support increased costs.

**200726700 - Probabilistic Monitoring of the Status and Trends of Habitat, Water Quality, and Fish Presence in the Washington Portion of the Columbia River Basin**

**Sponsor:** Interagency Committee (IAC)
**Requested FY07:** $835,391 **FY08:** $1,076,591 **FY09:** $1,076,591
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 5a **Prioritization Category:** Recommended Action
**General comments:** Although monitoring is a high priority throughout the CRB, a concerted effort is needed to prioritize what to monitor and where during the 2007-2009 period.

**200717800 - Monitoring fine sediment delivery in the Entiat subbasin**

**Sponsor:** US Forest Service (USFS) - Pacific Northwest Research Station
**Requested FY07:** $265,570 **FY08:** $145,830 **FY09:** $154,010
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 5b **Prioritization Category:** Do Not Fund
**General comments:** The MSRT questions BPA responsibility for this project. There is currently an MOU between USFS and BPA that covers cost sharing where there is shared responsibility for mitigation. The MSRT did not find a good fit in the Council's research plan for this project. Is this project coordinated with the CSMEP and PNAMP sampling protocols efforts? The sponsors

propose to develop protocols, but then propose a continuous study with no end determined.

H) Hatchery status and trend
I) Hatchery action effectiveness
J) Harvest status and trend
K) Harvest action effectiveness

**200206000 - Nez Perce Harvest Monitoring**

*This project is included in the Multi-province budget category.*
**Sponsor:** Nez Perce Tribe
**Requested FY07:** $336,447 **FY08:** $346,538 **FY09:** $356,934
**MSRT Recommended FY07:** $322,646 **FY08:** $322,646 **FY09:** $322,646
**Monitoring component:** 4a **Prioritization Category:** High Priority
**General comments:** Data feeds run reconstruction and other analysis efforts.
**Budget comments:** No comments.

L) Estuary and Ocean status and trend
M) Estuary action effectiveness
N) Predation:
-Predator population census
-Predator control effectiveness
*(see On-the-ground proposals)*
O) Water/land acquisition tracking

**III. Research**

A) Hatcheries/Artificial Propagation
1) Best Management Practices

**199305600 - Research to advance hatchery reform, including captive broodstocks**

*This project is included in the Multi-province budget category.*
**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $1,474,045 **FY08:** $1,512,513 **FY09:** $1,567,424
**MSRT Recommended FY07:** $1,468,100 **FY08:** $1,468,100 **FY09:** $1,468,100
**Research focal theme:** 1 **Prioritization Category:** High Priority
**General comments:** This project has provided core research evaluating captive broodstock methodologies. Some MSRT members expressed concern that BPA is funding some research that may be more appropriately funded within NOAA's congressional budget. Cost share? The project appears to be a grab bag of important research items. Some research items may be more important than others. The MSRT ranked the project as High Priority without a clear understanding of the importance of each question the project is attempting to address. Although this is an ongoing project, some of the tasks proposed are new. The proposal merits additional scrutiny to determine high priority research topics and reduction in budget. The MSRT would like to see better integration with project number 200203100 and 200733500. There appears to be some lack of coordination and possibly some duplication between this older “parent” project and several of the new NOAA proposals in this group.
**Budget comments:** The MSRT considered this proposal while reviewing the research projects in the basinwide category.

**199703800 - Listed Stock Chinook Salmon Gamete Preservation**

*This project is included in the Multi-province budget category.*
This proposal also addresses functions under On-the-Ground Actions
**Sponsor:** Nez Perce Tribe
**Requested FY07:** $339,525 **FY08:** $354,522 **FY09:** $362,233
**MSRT Recommended FY07:** $308,447 **FY08:** $308,447 **FY09:** $308,447

**Research focal theme:** **Prioritization Category:** High Priority
**General comments:** This project collects gametes to support the safety net Program initiated in previous biological opinions. This project should be reviewed with all hatchery projects.
**Budget comments:** The MSRT recommends funding this project at 2006 levels.

**200203100 - Growth modulation in salmon supplementation**

**Sponsor:** National Oceanic & Atmospheric Administration (NOAA)
**Requested FY07:** $355,378 **FY08:** $373,601 **FY09:** $392,693
**MSRT Recommended FY07:** $353,850 **FY08:** $353,850 **FY09:** $353,850
**Research focal theme:** 1 **Prioritization Category:** High Priority
**General comments:** This is a basic research project developing hatchery practice improvements. The study is investigating what hatchery practices are driving the large number of precocial males returning to the Cle Elum hatchery. The current proposal expands that work beyond the Yakima basin (about 20% of the proposal). The issue this project addresses (larger percentage of precocial males) is a high priority critical uncertainty. The MSRT are not sure if this study design is the best we can do for addressing this uncertainty. The MSRT will look to the ISRP review for determination of the study design adequacy. The MSRT would like to see better integration with project number 199305600. This proposal should be reviewed with all hatchery reform or hatchery research projects.
**Budget comments:** Due to the limited funding environment, the MSRT recommends sequencing the work within this project to meet FY 2006 funding levels (plus 5% for increased costs) for the next three years.

**200705100 - Assessment of Interactions between Hatchery and Wild Summer Steelhead in the John Day River Subbasin**

**Sponsor:** Confederated Tribes of Warm Springs Reservation of Oregon
**Requested FY07:** $265,615 **FY08:** $219,285 **FY09:** $223,802
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** Recommended Action
**General comments:** This project should be tied into the pilot project for intensively monitored watersheds (project number 200301700 - John Day subbasin portion), if funded. The MSRT does not believe that this is the highest priority location for this type of work to occur to provide a basin-wide benefit. A member of the MSRT would like the ISRP to review the sampling methodology (this project may not be able to answer the question it is addressing).

**200711000 - Differences in Functional Genes Between Hatchery and Wild Chinook Salmon**

**Sponsor:** University of Idaho - Aquaculture Research Institute
**Requested FY07:** $472,018 **FY08:** $611,167 **FY09:** $506,241
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** Recommended Action
**General comments:** This proposal should be reviewed with all hatchery reform or hatchery research projects.

**200717700 - Protecting wild steelhead populations by minimizing the behavioral differences between hatchery and wild populations.**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $285,438 **FY08:** $309,678 **FY09:** $318,997
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** Recommended Action
**General comments:** If this project were recommended for funding by the Council, a specific time frame should be determined for the course of their study. This proposal should be reviewed with all hatchery reform or hatchery research projects.

**200729400 - Control of BKD by Inactivation of the Renibacterium salmoninarum Sortase Enzyme as an Alternative to Antibiotics**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $223,694 **FY08:** $238,875 **FY09:** $251,359
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** Recommended Action
**General comments:** This project addresses a High Priority issue within the basin hatcheries. It is unclear to the MSRT if this project is the one to address this issue. The ISRP review should help in the final determination of technical merits for this project. This proposal should be reviewed with all hatchery reform or hatchery research projects.

**200733500 - Migration and homing ecology of supplemented and wild spring Chinook salmon.**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $395,168 **FY08:** $420,483 **FY09:** $426,565
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** Recommended Action
**General comments:** The MSRT would like to see better integration with project number 199305600. This project would build on existing YKFP efforts to get better and more specific information on release information and carcass location post-spawning. Some MSRT members see this work as very redundant with the YKFP project and recommend a Do Not Fund. This proposal should be reviewed with all hatchery reform or hatchery research projects.

**200737000 - Methods of Applying Salmon Timing Mechanisms to Wild and Hatchery Fish Management**

**Sponsor:** The B. Taylor Group LLC
**Requested FY07:** $110,000 **FY08:** $110,000 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** Do Not Fund
**General comments:** This proposal was inadequate to determine merit and no ties to specific guidance documents were provided.

2) Reproductive Success

No new work should be funded in this area of research until the existing projects have been confirmed to be meeting current needs. If new work is clearly focused on current management priorities, they should be given full consideration. A current assumption by the MSRT is that we cannot fund existing work with the current budget allocation. Therefore, the first step should be to fine tune the existing projects and make reductions where work is not addressing the most important questions.

a- Sockeye

**200716000 - Evaluation of spawning success in Pacific salmon using electromyogram telemetry**

**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $199,983 **FY08:** $205,896 **FY09:** $212,652
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** Recommended Action
**General comments:** This project is evaluating the question of whether specific fish are spawning in the wild (Red Fish Lake sockeye), where and when they spawn. This project is different from the genetic studies in that if stocks are shown to be less fit, this project can help explain why. This project should be grouped with similar efforts to insure no redundancy and appropriate priorities. The underlying research into reproductive success of salmon and steelhead is a Core Program need. Which projects should be funded to address the critical management questions cannot be determined by the MSRT. The new reproductive success projects are ranked Recommended Action. Although this information is understood as a high priority need, how each of these projects are addressing specific management questions needs to be explained.

b- Chinook

**198909600 - Genetic Monitoring of Snake River Chinook Salmon and Steelhead**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $513,210 **FY08:** $527,980 **FY09:** $543,280
**MSRT Recommended FY07:** $483,525 **FY08:** $483,525 **FY09:** $483,525
**Research focal theme:** 1 **Prioritization Category:** High Priority
**General comments:** This project has been ongoing for possibly 17 years. What have we learned so far? The project established a baseline genetic framework and is now filling in more specific genetic information on particular stocks. This project should be grouped with similar efforts to insure no redundancy and appropriate priorities. The underlying research into reproductive success of salmon and steelhead is a Core Program need. Which projects should be funded to address the critical management questions cannot be determined by the MSRT. The ongoing reproductive success projects are ranked High Priority as an understood need, but how each of these projects are addressing specific management questions needs to be fully explained.
**Budget comments:** Due to the limited funding environment, the MSRT recommends sequencing the work within this project to meet FY 2006 funding levels (plus a 5% increase for increased costs) for the next three years.

**200306000 - Evaluating relative reproductive success of wild and hatchery origin Snake River fall Chinook spawners upstream of Lower Granite Dam**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $28,979 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $28,979 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** High Priority
**General comments:** It appears that this project is requesting funds for completion of work. The MSRT supports completion of this project at the level of funding requested.
**Budget comments:** This proposal has requested funds to complete a final report for the project.

**200725000 - Genetic Evaluation of Chinook Salmon Supplementation in Idaho Rivers**

**Sponsor:** Idaho Department of Fish and Game / Nez Perce Tribe
**Requested FY07:** $1,287,711 **FY08:** $959,465 **FY09:** $966,814
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** Recommended Action
**General comments:** This project adds a genetic analysis component to the existing ISS study in response to a recent ISRP review. Moved from local province review. This project should be grouped with similar efforts to insure no redundancy and appropriate priorities. The underlying research into reproductive success of salmon and steelhead is a Core Program need. Which projects should be funded to address the critical management questions cannot be determined by the MSRT. The new reproductive success projects are ranked Recommended Action. Although this information is understood as a high priority need, how each of these projects are addressing specific management questions needs to be explained.

c- Steelhead

**200001700 - Recondition Wild Steelhead Kelt**

*This project is included in the Multi-province budget category.*
**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $945,906 **FY08:** $953,835 **FY09:** $985,931
**MSRT Recommended FY07:** $400,000 **FY08:** $400,000 **FY09:** $400,000
**Research focal theme:** 1 **Prioritization Category:** High Priority
**General comments:** This project tests the hypothesis that we can recondition kelts and evaluates methodology for reconditioning (feeding, timing, etc.). The MSRT would like this project reviewed

with 200306200 in order to find budget efficiencies.
**Budget comments:** The MSRT recommends deferring the expansion of this project into the Snake River. This project is also tied to a project in the research portion of the Basinwide budget category (200306200), and should be considered during that project's review.

**200306200 - Evaluate the Relative Reproductive Success of Reconditioned Kelt Steelhead**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $612,083 **FY08:** $645,912 **FY09:** $672,115
**MSRT Recommended FY07:** $596,758 **FY08:** $596,758 **FY09:** $596,758
**Research focal theme:** 1 **Prioritization Category:** High Priority
**General comments:** This project evaluates the reproductive success of reconditioned kelts. The MSRT would like this project reviewed with 200001700 in order to find budget efficiencies.
**Budget comments:** Due to the limited funding environment, the MSRT recommends sequencing the work within this project to meet FY 2006 funding levels (plus 5% for increased costs) for the next three years.

**200203000 - Develop Progeny Marker for Salmonids to Evaluate Supplementation**

**Sponsor:** Confederated Tribes of the Umatilla Indian Reservation
**Requested FY07:** $304,726 **FY08:** $319,563 **FY09:** $335,711
**MSRT Recommended FY07:** $273,000 **FY08:** $273,000 **FY09:** $273,000
**Research focal theme:** 1 **Prioritization Category:** High Priority
**General comments:** This project should be grouped with similar efforts to insure no redundancy and appropriate priorities. The underlying research into reproductive success of salmon and steelhead is a Core Program need. Which projects should be funded to address the critical management questions cannot be determined by the MSRT. The ongoing reproductive success projects are ranked High Priority as an understood need, but how each of these projects are addressing specific management questions needs to be fully explained. Also, these projects may need to be considered ongoing monitoring rather than research.
**Budget comments:** The increase in funding from 2006 is linked to a subcontract for otilith analysis. The MSRT recommends funding this project at a slightly reduced level to continue this important study.

**200305000 - Eval Of Reprod Of Steelhead**

**Sponsor:** University of Washington
**Requested FY07:** $320,447 **FY08:** $259,894 **FY09:** $259,978
**MSRT Recommended FY07:** $320,447 **FY08:** $259,894 **FY09:** $259,978
**Research focal theme:** 1 **Prioritization Category:** High Priority
**General comments:** This project should be grouped with similar efforts to insure no redundancy and appropriate priorities. The underlying research into reproductive success of salmon and steelhead is a Core Program need. Which projects should be funded to address the critical management questions cannot be determined by the MSRT. The ongoing reproductive success projects are ranked High Priority as an understood need, but how each of these projects are addressing specific management questions needs to be fully explained. Also, these projects may need to be considered ongoing monitoring rather than research. The MSRT would like some assurance that this work is not being duplicated within other projects funded within the Program.
**Budget comments:** The increase in funding from 2006 is linked to construction of a smolt trap and upgrades a fish weir. The MSRT recommends funding this project at its requested level.

**200305400 - Repro Of Steelhead In Hood River**

**Sponsor:** Oregon State University
**Requested FY07:** $339,575 **FY08:** $353,157 **FY09:** $371,558
**MSRT Recommended FY07:** $290,850 **FY08:** $290,850 **FY09:** $290,850
**Research focal theme:** 1 **Prioritization Category:** High Priority
**General comments:** This project should be grouped with similar efforts to insure no redundancy

and appropriate priorities. The underlying research into reproductive success of salmon and steelhead is a Core Program need. Which projects should be funded to address the critical management questions cannot be determined by the MSRT. The ongoing reproductive success projects are ranked High Priority as an understood need, but how each of these projects are addressing specific management questions needs to be fully explained. Also, these projects may need to be considered ongoing monitoring rather than research.
**Budget comments:** Due to the limited funding environment, the MSRT recommends sequencing the work within this project to meet FY 2006 funding levels (plus 5% for increased costs) for the next three years.

**200729900 - Investigation of the Relative Reproductive Success of Stray Hatchery and Wild Steelhead and the Influence of Hatchery Strays on Natural Productivity in the Deschutes River Subbasin**

**Sponsor:** Oregon Department of Fish & Wildlife (ODFW)
**Requested FY07:** $466,730 **FY08:** $409,178 **FY09:** $395,072
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 1 **Prioritization Category:** Recommended Action
**General comments:** Moved from local province review. This project should be grouped with similar efforts to insure no redundancy and appropriate priorities. The underlying research into reproductive success of salmon and steelhead is a Core Program need. Which projects should be funded to address the critical management questions cannot be determined by the MSRT. The new reproductive success projects are ranked Recommended Action. Although this information is understood as a high priority need, how each of these projects are addressing specific management questions needs to be explained.

B) Hydrosystem
1) General

**200202700 - Forecasting Hydrosystem Operations to Benefit Anadromous Fish Migration**

**Sponsor:** US Department of Energy (DOE)
**Requested FY07:** $446,547 **FY08:** $451,931 **FY09:** $454,888
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Recommended Action
**General comments:** This is a new project. This is a follow up project to a BPA 2000 BiOp project addressing RPA 143. The original phase of the project covering the four Snake River reservoirs has completed. RPA 143 and the UPA anticipated extension of the temperature model selected by the Water Quality Team, CEQUAL-W2, down to Bonneville Dam. The initial portion of this project proposes to do so but is a component of a larger effort addressing load following/peaking operations and fish movement. This project will develop a computer model to predict the hydrograph under different flow simulations, linking several other existing models (mostly hydrodynamic and temperature models). Several MSRT members view this project as primarily benefiting power operations, and only secondarily benefiting fish. The non-temperature portion of the proposal requires a policy change affecting hydro operations.

**200737400 - Investigating Juvenile Salmonid Mortality Associated with Lock Flushing**

**Sponsor:** bluefish.org
**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Do Not Fund
**General comments:** Although this proposal poses an interesting question, it does not provide enough detail to evaluate nor does funding appear adequate to complete the study. Evaluation of juvenile salmonid survival through the locks is not called for in any guidance documents. A more complete proposal should be developed for the AFEP process.

**200738500 - Investigating Flood Control Benefits and Flooding Risks of Federally Controlled Lower Snake Dams**

**Sponsor:** bluefish.org
**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Do Not Fund
**General comments:** Flood control is a USACE responsibility and there was a very recent study out for public comment.

2) Load Following Studies

**200733600 - Effects of short-term flow fluctuations on salmon migration**

**Sponsor:** Oak Ridge National Laboratory
**Requested FY07:** $129,646 **FY08:** $164,968 **FY09:** $188,194
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Recommended Action
**General comments:** This is a load following study at mainstem Snake River dams where load following is not currently allowed because these projects are held within one foot of minimum operating pool (MOP) during fish migration season. A significant policy shift would have to occur to implement results from this study due to current MOP operations.

**200736400 - Determining the effects of load following on reservoir hydraulics and migration behavior of juvenile salmonids.**

**Sponsor:** Columbia River Research Laboratory
**Requested FY07:** $711,105 **FY08:** $760,883 **FY09:** $814,145
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Recommended Action
**General comments:** This proposal should be evaluated with other load following studies.

3) Fall Chinook Life History

**199102900 - Research, monitoring, and evaluation of emerging issues and measures to recover the Snake River fall Chinook salmon ESU**

**Sponsor:** US Fish & Wildlife Service (USFWS)
**Requested FY07:** $499,731 **FY08:** $499,731 **FY09:** $499,731
**MSRT Recommended FY07:** $456,375 **FY08:** $456,375 **FY09:** $456,375
**Research focal theme:** 2 **Prioritization Category:** Core Program
**General comments:** AFEP is funding a study on transportation and spill to determine if hatchery surrogate fish behave in a similar manner as naturally produced smolts. That study evaluates behavior and timing down to Lower Granite Dam. This project focuses on wild fish. All elements of the project may not be Core Program (i.e., food habits).
**Budget comments:** Due to the limited funding environment, the MSRT recommends sequencing the work within this project to meet FY 2006 funding levels for the next three years, with $100,000 of added funding annually to support the density dependence portion of the study.

**200203200 - Snake River fall Chinook salmon life history investigations**

**Sponsor:** US Geological Survey (USGS) – Cook
**Requested FY07:** $4,416,192 **FY08:** $3,991,426 **FY09:** $4,094,349
**MSRT Recommended FY07:** $750,000 **FY08:** $750,000 **FY09:** $750,000
**Research focal theme:** 2 **Prioritization Category:** Core Program
**General comments:** This project can be flexible in funding level based on which tasks are moved forward and coordination with other projects (USACE acoustic receivers). This project needs to be reviewed with all the other Fall Chinook studies. The set of questions surrounding SR Fall Chinook survival and movement are Core Program issues. Which suite of projects should be funded to

address those questions needs to be strategically developed to fit within an available budget and address management questions with enough certainty to be useful for management decisions.
**Budget comments:** The budget for this proposal contains many uncertainties and covers a wide breadth of information. The budget was submitted as if no other monitoring programs were in place at the dams. We know that COE-funded monitoring programs will likely be in place, so budget efficiencies will be available. The MSRT recommends funding this project at a target level, and ask the projects sponsors to seek cost and study design efficiencies to meet that target. The MSRT recommends that the project sponsors proceed at a slower pace and focus on where the yearling life history type fish reside over the winter. The budget target should average no more than $750,000 annually over three years.

**200716800 - Using otolith microstructure and microchemistry to delineate growth patterns and spatial structure of Snake River Fall Chinook salmon**

**Sponsor:** National Oceanic & Atmospheric Administration (NOAA)
**Requested FY07:** $459,527 **FY08:** $447,564 **FY09:** $460,992
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Recommended Action
**General comments:** This project could help answer the question of where fall Chinook may over winter in the reservoirs if the water chemistry within each pool is adequately different.

4) Delayed Mortality

**200304100 - Evaluate Delayed (Extra) Mortality Associated with Passage of Yearling Chinook Salmon through Snake River Dams**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $1,328,500 **FY08:** $1,346,306 **FY09:** $1,364,645
**MSRT Recommended FY07:** $1,328,500 **FY08:** $1,346,306 **FY09:** $1,364,645
**Research focal theme:** 2 **Prioritization Category:** Core Program
**General comments:** Some MSRT members expressed concern about language in this proposal that indicated that this project may not be able to accomplish it objectives. This project is addressing a Core Program need; however, the MSRT needs the ISRP and other technical reviews for this project to determine if this project can accomplish its objectives.
**Budget comments:** Although this project addresses a primary management question, it is unclear whether this project can be successful in answering the latent mortality question. The MSRT would encourage the project sponsors to find efficiencies by coordinating with other tagging projects for the in-river fish. This project needs to be reconciled/coordinated with the AFEP project addressing latent mortality. This is a high priority, but future funding levels for this project should be based on the project's successful implementation of its study design.

C) Tributary and Mainstem Habitat

1) Mainstem Habitat

**200303800 - Evaluate Restoration Potential of Snake River Fall Chinook Salmon Spawning Habitat**

**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $289,960 **FY08:** $378,972 **FY09:** $311,739
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** This project is coordinated with project number 199900301. This project has completed its initial 3 years worth of work and will be delivering a final report at the end of 2006. This proposal would expand the evaluation to the next two dams upriver. The effort to date has focused on the bathymetry and hydrology below the dams to determine potential spawning habitat. The MSRT does not view this as a High Priority due to lack of redd identification and enumeration.

This project number (and work) is identified in the 2005-2007 Action Agencies Implementation Plan (IP). The continuation and expansion of the project as proposed for 07-09 is not identified in the IP. The IP states "Using the physical characteristics identified at the reference site, quantify the physical characteristics at each of two Snake River study sites: 1) the Ice Harbor tailrace downstream to the Columbia River confluence, and 2) the Lower Granite tailrace from which a spatial data in GIS format and/or spreadsheet/database files; letter report of summary will be produced." This report is due in December and according to language provide in the proposal, this project will be completed consistent with the IP. The work proposed here should be considered new, and therefore not in the current IP (see language from proposal narrative).

**200714400 - Evaluation of water temperature exposure in the Columbia River hydrosystem on reproductive success of adult and juvenile Chinook salmon and steelhead**

**Sponsor:** University of Idaho
**Requested FY07:** $132,630 **FY08:** $136,825 **FY09:** $141,161
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** No comments.

**200716900 - Total Dissolved Gas Effects on Incubating Chum Salmon Below Bonneville Dam**

**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $451,147 **FY08:** $235,341 **FY09:** $164,912
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** This project has approved for funding by the USACE for FY 2006. The AFEP program is annually funded and out of sync with this funding process for FY 2007 and beyond. This project is directly related to spill operations at Bonneville Dam. This project is coordinated with Project number 199900301. This is a High Priority need in the 2004 FCRPS Biological Opinion UPA. The MSRT believes that if the USACE had the responsibility to fund the feasibility study, then it would likely be their responsibility to fund the follow on work. There is a similar proposal identified in the Corps FY07 AFEP research planning process.

**200725600 - Physical and Biological Testing of a Flow Velocity Enhancement System**

**Sponsor:** Natural Solutions
**Requested FY07:** $251,546 **FY08:** $330,691 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** This project should be considered within the USACE AFEP process. The effort is mainly focused at mainstem dams in the far forebay to entrain fish prior to the confused currents directly above the dams. This request is for phase one of the evaluation. This work needs to be well coordinated with other passage improvement projects to insure no overlap and integration with other research efforts by the USACE.

**200727300 - Evaluate the effects of hyporheic exchange on egg pocket water temperature in Snake River fall Chinook salmon spawning areas**

**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $163,547 **FY08:** $210,086 **FY09:** $193,557
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** This project should probably be funded by Idaho Power Company and considered in the FERC relicensing process. Any recommendations as a result of this project would have to be implemented by IPC.

**200737700 - Cooler Temperatures for Federally Controlled Reservoirs**

**Sponsor:** bluefish.org

**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Do Not Fund
**General comments:** The USACE evaluated discharges from Brownlee, as well as previous Battelle studies. This issue is being addressed through FERC relicensing.

2) Tributary Habitat

**200704900 - Efficacy of carcass analogs for restoring the productivity of nutrient limited salmonid streams**

**Sponsor:** Columbia River Research Laboratory
**Requested FY07:** $442,707 **FY08:** $476,635 **FY09:** $501,996
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** The Council recently funded several coordinated studies on nutrient enhancement. The MSRT question the need for further basic research. There is nutrient enhancement occurring via carcass placement consistent with state permits. If recommended for funding, this project should be coordinated with other nutrient enhancement projects being funded in the subbasins.

**200713600 - Beavers as stream restorationists? Determining Systemwide status and trends in beaver impoundments in tributary streams, and the relationships between beaver impoundment and salmonids.**

**Sponsor:** University of Idaho
**Requested FY07:** $106,695 **FY08:** $105,890 **FY09:** $85,889
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** BPA would like to see more cost share for this type of activity.

**200725200 - Multi-scale assessment of hyporheic flow, temperature and fish distribution in Columbia River Tributaries**

**Sponsor:** Confederated Tribes of the Umatilla Indian Reservation
**Requested FY07:** $226,306 **FY08:** $195,372 **FY09:** $178,888
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** Comparison of this project with other projects focused on hyporheic flow should be performed. Some members of the MSRT felt this should be ranked higher. The benefits of restoring this basic and pervasive limiting factor for salmonid survival is clear, few correlate studies (similar ecotype and basin hydrography) exist to compare appropriately.

**200713100 - Screening diversions for conservation of fish populations in the Columbia River Basin: entrainment losses, prioritization, and the efficacy of alternative technology designs**

**Sponsor:** Columbia River Research Laboratory
**Requested FY07:** $407,735 **FY08:** $375,200 **FY09:** $338,824
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0 **Research focal theme:** 3 **Prioritization Category:** Do Not Fund
**General comments:** The purpose of subbasin planning was to generate priorities within subbasins for habitat improvements. The MSRT would be surprised that this is an urgent need at the local level.

**200715100 - Nutrient Enhancement Business Plan**

**Sponsor:** Lower Columbia Fish Enhancement Group
**Requested FY07:** $100,000 **FY08:** $50,000 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Do Not Fund

**General comments:** The MSRT views the purpose of this project as mostly economic development.

**200718000 - Evaluating and prioritizing restoration of riparian habitat for improving in-stream conditions for anadromous salmonids in the Columbia River basin.**

**Sponsor:** US Forest Service (USFS) - Pacific Northwest Research Station
**Requested FY07:** $190,328 **FY08:** $197,144 **FY09:** $210,019
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Do Not Fund
**General comments:** As a USFS effort, more cost share may be appropriate.

3) Habitat Action Evaluation

**200726200 - Enhanced Landscape Classification to Improve Assessment of Conservation Restoration and Mitigation Projects**

**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $295,911 **FY08:** $306,851 **FY09:** $291,753
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Do Not Fund
**General comments:** More cost share would be appropriate with this project. The purpose of the model goes beyond BPA responsibilities. With the completion of Subbasin Plans and comprehensive subbasin assessments, this project seems out of sync with the Program implementation.

D) The Estuary

**200301000 - Historic Habitat Opportunities and Food-Web Linkages of Juvenile Salmon in the Columbia River Estuary and Their Implications for Managing River Flows and Restoring Estuarine Habitat**

**Sponsor:** National Oceanic & Atmospheric Administration (NOAA)
**Requested FY07:** $769,214 **FY08:** $750,067 **FY09:** $756,971
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 4 **Prioritization Category:** Core Program
**General comments:** New work includes partnering with Columbia Land Trust and CREST on restoration actions. Much of this project should be prioritized in the Estuary Province. The contribution to a regional monitoring program is most relevant to the Systemwide process.
**Budget comments:** This proposal is currently recommended in the Estuary Province to be funded at a level of $729,000, as the highest rated proposal in that province. This funding level is relatively higher than other proposals being funded in the Basinwide (Systemwide) province (most ongoing projects were rolled back to 2006 levels (plus 5%) by the MSRT).

**200702600 - Historic Changes in Organic Nutrient Sources and Productivity Proxies in the Columbia River Estuary in Relation to Juvenile Salmon Habitat Restoration Priorities**

**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $100,177 **FY08:** $95,896 **FY09:** $103,205
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 4 **Prioritization Category:** Recommended Action
**General comments:** It appears that there may be duplication with project number 200301000. If recommended for funding these two projects should be closely coordinated. This project will direct on-the-ground work in the Estuary Province, and therefore should be prioritized and funded there. An analysis of the sediment core samples would allow the analysis of nutrient flow modifications in the estuary due to construction and operation of the hydrosystem.

E) The Ocean

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.

The MSRT believes that the NOAA Fisheries proposal best addresses the fundamental management questions necessary to improve management of the FCRPS. The significant investment in PIT tags is delivering information on the ocean life stage survival of salmon and steelhead, which is mainly what the two tracking projects would provide for the Program. Although, the MSRT believes that the two tracking projects are good studies for the questions they are addressing, they believe that under the limited funding scenario, and priority of other research needs, BPA should reduce their commitment to those two projects.

**199801400 - Ocean Survival Of Salmonids**

**Sponsor:** National Oceanic & Atmospheric Administration (NOAA)
**Requested FY07:** $2,499,879 **FY08:** $2,578,533 **FY09:** $2,655,894
**MSRT Recommended FY07:** $2,170,600 **FY08:** $2,170,600 **FY09:** $2,170,600
**Research focal theme:** 5 **Prioritization Category:** High Priority
**General comments:** The predator/prey studies included in the proposal are unique and important for ocean studies. Levels of cost share by NOAA should be evaluated since this project addresses NOAA's core mission activities. These projects address a Core Program need, but it is unclear which tasks within the project meet that standard. Several MSRT members are concerned that the suite of ocean projects have outgrown a sustainable size for the Program and are addressing questions derived outside of the needs of the Program. This project needs to be reviewed with other ocean studies. The set of questions around ocean survival and movement are Core Program issues. Which suite of projects should be funded to address those questions needs to be strategically developed to fit within the available budget and address management questions with enough certainty to be useful for decision making.
**Budget comments:** This project best addresses the fundamental management questions necessary to improve management and operation of the FCRPS. Due to the limited funding environment, the MSRT recommends sequencing the work within this project to meet the FY 2006 funding level for the next three years. Funding in addition to the ongoing funding level was provided for the addition of two new tasks: 1) Estuary survival study, and 2) a growth model.

**200300900 - Canada-Usa Shelf Salmon Survival Study**

**Sponsor:** Canada Department Of Fisheries & Oceans
**Requested FY07:** $604,400 **FY08:** $598,900 **FY09:** $604,400
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 5 **Prioritization Category:** High Priority
**General comments:** The project collects coded wire tags of juvenile fish to piece together distributions during their first year in the sea. Some prioritization of tasks proposed in the suite of ocean projects must occur. These projects address a Core Program need, but it is unclear which tasks within the project meet that standard. Several MSRT members are concerned that the suite of ocean projects have outgrown a sustainable size for the Program and are addressing questions derived outside of the needs of the Program. This project needs to be reviewed with other ocean studies. The set of questions around ocean survival and movement are Core Program issues. Which suite of projects should be funded to address those questions needs to be strategically developed to fit within an available budget and address management questions with enough certainty to be useful for decision making.

**Budget comments:** This project does not address the primary management questions related to operation and mitigation of the FCRPS. Knowing specific location of fish movement in the ocean will not contribute significantly to the life cycle studies necessary for hydro operations.

**200311400 - Acoustic Tracking For Survival**

**Sponsor:** Kintama Research
**Requested FY07:** $1,499,816 **FY08:** $1,499,816 **FY09:** $1,499,816
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 5 **Prioritization Category:** High Priority
**General comments:** POST tracking project. Some prioritization of tasks proposed in the suite of ocean projects must occur. These projects address a Core Program need, but it is unclear which tasks within the project meet that standard. Several MSRT members are concerned that the suite of ocean projects have outgrown a sustainable size for the Program and are addressing questions derived outside of the needs of the Program. This project needs to be reviewed with other ocean studies. The set of questions around ocean survival and movement are Core Program issues. Which suite of projects should be funded to address those questions needs to be strategically developed to fit within an available budget and address management questions with enough certainty to be useful for decision making.
**Budget comments:** This project does not address the primary management questions related to operation and mitigation of the FCRPS. Knowing specific location of fish movement in the ocean will not contribute significantly to the life cycle studies necessary for hydro operations.

**200709000 - Effects of the marine environment on the growth and survival of Columbia Basin spring Chinook and sockeye salmon stocks.**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $70,319 **FY08:** $58,694 **FY09:** $9,124
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 5 **Prioritization Category:** Recommended Action
**General comments:** This project appears redundant with project number 199801400. The tasks presented here appear to be included in project number 199801400 (by different implementers). Some prioritization of tasks proposed in the suite of ocean projects must occur. These projects address a Core Program need, but it is unclear which tasks within the project meet that standard. This project needs to be reviewed with other ocean studies. The set of questions around ocean survival and movement are Core Program issues. Which suite of projects should be funded to address those questions needs to be strategically developed to fit within an available budget and address management questions with enough certainty to be useful for decision making.

F) Harvest

**200710700 - What was old is new again: evaluate the pound net and beach seine as innovative live capture selective harvest gears**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $365,514 **FY08:** $405,459 **FY09:** $406,792
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 6 **Prioritization Category:** Recommended Action
**General comments:** Tribal members of the MSRT expressed their concern about selective harvest. This may potentially be considered a conservation action in the 2006 Biological Opinion.

**200722700 - Rapid DNA Profiling of Hatchery and Wild Salmon Stocks with Single Nucleotide Polymorphism (SNP) Profiling**

**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $213,250 **FY08:** $232,194 **FY09:** $66,755
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 6 **Prioritization Category:** Recommended Action

**General comments:** No comments.

**200723000 - Selective Gear Demonstration Project: Reef Net Fishing Gear for Lower Columbia River Commercial Salmon Fishery**

**Sponsor:** Washington Sea Grant Program
**Requested FY07:** $50,697 **FY08:** $53,716 **FY09:** $35,028
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 6 **Prioritization Category:** Recommended Action
**General comments:** Tribal members of the MSRT expressed their concern about selective harvest. This may potentially be considered a conservation action in the 2006 Biological Opinion.

**200724900 - Evaluation of Live Capture, Selective Fishing Gear**

**Sponsor:** Colville Confederated Tribes
**Requested FY07:** $394,600 **FY08:** $254,800 **FY09:** $264,000
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 6 **Prioritization Category:** Recommended Action
**General comments:** Tribal members of the MSRT expressed their concern about selective harvest. This may potentially be considered a conservation action in the 2006 Biological Opinion. This project is tied to the Chief Joseph Hatchery project for collection of brood stock.

G) Population Structure and Diversity

**200732300 - Investigate genetic parentage analysis techniques to estimate spawner abundance in ESA-listed steelhead populations**

**Sponsor:** Idaho Department of Fish & Game
**Requested FY07:** $406,964 **FY08:** $422,191 **FY09:** $438,030
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 7 **Prioritization Category:** High Priority
**General comments:** This technique would fill gaps in managing steelhead in Idaho (TRT inputs), where adult traps are not being used. The technique would have to be evaluated for cost effectiveness against other sampling methods, once it was developed. The ability to provide an inexpensive technique to fill this gap is a High Priority need across the basin. One member suggested that PNAMP will be providing similar information as part of protocol review, publication, gap analysis and possible side/side comparison. This project could be sequenced as a pilot study once PNAMP provides clearer direction.
**Budget comments:** The MSRT adopted a principal that ISRP Not Fundable proposals were not going to be included in the budget balance exercise.

**200703600 - Mid-Columbia Trophic Dynamics Project**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $633,000 **FY08:** $533,000 **FY09:** $533,000
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 7 **Prioritization Category:** Recommended Action
**General comments:** This project studies the effects of predacious fish in the mid-Columbia. This project could also be considered in section 9, Invasives, in the Research Plan. Significant cost share would be expected by BPA. How does this project tie to the existing PUD predator studies?

**200717500 - DNA typing to identify native inland Oncorhynchus mykiss**

**Sponsor:** Washington State University
**Requested FY07:** $80,445 **FY08:** $124,266 **FY09:** $129,235
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 7 **Prioritization Category:** Recommended Action
**General comments:** There are two projects addressing this issue. This project would occur for several populations in Washington. If this project were funding it should be closely coordinated with project number 200721800. This project addresses pervasive TRT issues with resident fish

genetic conservation contribution to anadromous life history type affecting many ESUs and populations.

**200721800 - Development of single nucleotide polymorphism (SNPs) genetic markers diagnostic between coastal rainbow trout and interior redband trout**

**Sponsor:** Idaho Department of Fish & Game
**Requested FY07:** $60,689 **FY08:** $25,392 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 7 **Prioritization Category:** Recommended Action
**General comments:** There are two projects addressing this issue. This project is focused in the Kootenai system but coordinates with other projects. If this project were funded it should be closely coordinated with project number 200717500.

**200736000 - Columbia River/Cowlitz River Eulachon Research and Monitoring Plan (ERMP)**

**Sponsor:** Steward and Associates
**Requested FY07:** $438,881 **FY08:** $410,542 **FY09:** $410,542
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 7 **Prioritization Category:** Recommended Action
**General comments:** This project provides an assessment of eulachon population status and distribution in the lower Columbia River. Some MSRT members would like to see the focus on limiting factors emphasized in this proposal with a reduction in other efforts within the proposal.

H) Effects of Climate Change on Fish and Wildlife

**200723600 - Strategic Adaptation of the Federal Columbia River Power System to Climate Variability and Change**

**Sponsor:** Portland State University
**Requested FY07:** $490,430 **FY08:** $491,812 **FY09:** $477,808
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Do Not Fund
**General comments:** There is an economic analyses contained in this proposal that would be suited for an IEAB review. The hydrologic model appears to be a reinvention of the wheel. The aspect of looking at climate change is on the mark and is included in the Council's work plan to include in power planning in the near future. The proposal will rely on a one dimensional temperature model and a new reservoir operations model that are not consistent with what the regional managers have agreed with.

I) Toxics

**200719700 - Evaluating the sublethal impacts of current use pesticides on the environmental health of salmonids in the Columbia River Basin.**

**Sponsor:** Northwest Fisheries Science Center
**Requested FY07:** $336,400 **FY08:** $354,000 **FY09:** $366,000
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 9 **Prioritization Category:** Recommended Action
**General comments:** Some MSRT members expressed concern about in-lieu issues with water quality regulators. Some MSRT members question the management application of this information. BPA would like to see an increased cost share for this project.

J) Invasive Species

**200708900 - Monitoring Invasive Species in the mainstem Columbia River: the development of a design to monitor the status and trends and provide for the early detection of invasive species**

**Sponsor:** US Geological Survey (USGS) – Cook

**Requested FY07:** $350,902 **FY08:** $403,695 **FY09:** $221,763
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 10 **Prioritization Category:** Recommended Action
**General comments:** Habitat based monitoring program for invasive species using an EMAP type of approach. Species include mussels, aquatic macrophytes, phytoplankton and zooplankton, and others. The MSRT were concerned that BPA is probably not the appropriate funding source for this project. A significant cost share would be expected if BPA were to fund.

**200727500 - Impact of American shad in the Columbia River**

**Sponsor:** Columbia River Research Laboratory
**Requested FY07:** $278,736 **FY08:** $360,313 **FY09:** $365,160
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 10 **Prioritization Category:** Recommended Action
**General comments:** The members of the MSRT feel that this is an important management question.

**200737100 - Documentation of food-web linkages in the mainstem Columbia River towards understanding the role of invasive species and establishing a baseline trophic state**

**Sponsor:** Columbia River Research Laboratory
**Requested FY07:** $209,774 **FY08:** $232,226 **FY09:** $105,146
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 10 **Prioritization Category:** Recommended Action
**General comments:** No comments.

K) Human Development

**200732200 - Ecosystem Economics Model for Willamette Basin Restoration and Conservation**

This proposal also addresses functions under Monitoring and Evaluation Methodologies L2) Landscape scale habitat analysis.
**Sponsor:** David Evans and Associates, Inc.
**Requested FY07:** $425,919 **FY08:** $143,650 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 11 **Prioritization Category:** Recommended Action
**General comments:** This is the only project that addresses cost effectiveness of actions proposed for the FY07-09 process. The proposal builds out from existing biological technical infrastructure that was developed for subbasin planning and recovery planning.

L) Monitoring and Evaluation Methodologies

1) General Methods

The suite of projects to be funded in this group needs to be strategically developed to fit within an available budget and address management questions with enough certainty to be useful for decision making. Guidance should be provided by PNAMP and CSMEP.

**198331900 - New Marking & Monitoring Tech**

**Sponsor:** National Oceanic & Atmospheric Administration (NOAA)
**Requested FY07:** $768,685 **FY08:** $1,357,243 **FY09:** $1,596,791
**MSRT Recommended FY07:** $909,930 **FY08:** $1,149,930 **FY09:** $909,930
**Research focal theme:** 12 **Prioritization Category:** Core Program
**General comments:** The MSRT would like to see cost sharing by the USACE for this work. The big cost for this project is for installing detectors at RSWs, which should be included in the cost of their development. A funding recommendation needs to consider the budget path for this project into the future. The MSRT would also like to make sure that the technology that is developed through this project includes usefulness for lamprey.

**Budget comments:** The MSRT recommends funding this project at its 2006 funding level (plus 5% for increased costs) average for the three years of funding, due to limited funding in the Basinwide category. The research scheduled in the proposal should be sequenced at a slower pace to adjust to the funding level proposed here. The MSRT supports a comprehensive review of tagging in the CRB. The results of that review will likely guide the continuation of this project. A one time cost of $240,000 is included for FY2008 for The Dalles sluiceway receiver.

**200100300 - Adult Pit Detector Installation**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $245,491 **FY08:** $184,235 **FY09:** $134,742
**MSRT Recommended FY07:** $245,491 **FY08:** $184,235 **FY09:** $134,742
**Research focal theme:** 12 **Prioritization Category:** Core Program
**General comments:** No comments.
**Budget comments:** The MSRT recommends funding this project at the levels requested.

**199902000 - Analyze Chinook Salmon Spatial and Temporal Dynamics and Persistence**

**Sponsor:** US Forest Service (USFS) - Rocky Mt Research Station
**Requested FY07:** $88,154 **FY08:** $92,485 **FY09:** $97,035
**MSRT Recommended FY07:** $88,154 **FY08:** $92,485 **FY09:** $97,035
**Research focal theme:** 12 **Prioritization Category:** High Priority
**General comments:** This project provides a long term data base with large geographic coverage that can be used for evaluating future sampling designs. The data collected by the project also contributes significantly to TRT evaluations and management of these stocks. How does this project fit into a regional monitoring program?
**Budget comments:** No comments.

**200700100 - Aquatic survey protocol comparison.**

**Sponsor:** US Forest Service - National Headquarters
**Requested FY07:** $450,000 **FY08:** $450,000 **FY09:** $450,000
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 12 **Prioritization Category:** High Priority
**General comments:** This proposal should be very closely coordinated with the CSMEP project.
**Budget comments:** The MSRT adopted a principal that ISRP Not Fundable proposals were not going to be included in the budget balance exercise.

**200721600 - Pacific Northwest Aquatic Monitoring Partnership-Fish Population Monitoring (FPM)--RME Design and Protocols. Programmatic and Standardized Work Products for PNW and the Columbia Basin**

**Sponsor:** Pacific Northwest Aquatic Monitoring Partnership (PNAMP)
**Requested FY07:** $19,718 **FY08:** $28,718 **FY09:** $28,718
**MSRT Recommended FY07:** $19,718 **FY08:** $28,718 **FY09:** $28,718
**Research focal theme:** 12 **Prioritization Category:** High Priority
**General comments:** This proposal should be rolled into the PNAMP coordination proposal (project number 200400200). It is confusing why these tasks and costs would not be included in the coordinator project.
**Budget comments:** No comments.

**200729100 - Developing and Assessing Freshwater Mussel Distribution, Abundance and Life History Survey Methods in the Columbia Basin in Washington.**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $55,330 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 12 **Prioritization Category:** Recommended Action
**General comments:** The MSRT is reviewing this proposal on the basis of protocol development.

**200735500 - Determining the Accuracy of Adult Coho Salmon Population Estimates from a**

**Random, Spatially Balanced design using Area-Under-the-Curve**
**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $100,192 **FY08:** $83,798 **FY09:** $87,990
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0 **Research focal theme:** 12
**Prioritization Category:** Recommended Action
**General comments:** This is a comparison of accuracies for techniques. This proposal should be guided by PNAMP and CSMEP. Application of the technique should be proposed and funded under a separate proposal.

**200735800 - Estimating the detection efficiency of snorkeling for detecting anadromous salmonid parr**
**Sponsor:** US Forest Service (USFS) - Rocky Mt Research Station
**Requested FY07:** $342,912 **FY08:** $294,702 **FY09:** $309,731
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 12 **Prioritization Category:** Recommended Action
**General comments:** The need for this type of work will be determined in the PNAMP and CSMEP projects developing standardized sampling protocols. Several MSRT members felt that their agencies/tribes had addressed this need (accuracy and precision of snorkel estimates). The project sponsor remained skeptical that this was the case and that there remained a regional need for this work. The ISRP should comment on the utility and purported uniqueness of the proposed methodology. The final CSMEP report may speak to the need for this type of study.

2) Landscape scale habitat analysis

**200719800 - Next Steps in Subbasin Planning: Umatilla Pilot Project**
**Sponsor:** Confederated Tribes of the Umatilla Indian Reservation
**Requested FY07:** $382,432 **FY08:** $420,675 **FY09:** $462,742
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 12 **Prioritization Category:** High Priority
**General comments:** This proposal would tie many of the existing models (EDT, AHA, QHA, Mainstem and estuarine passage models) for planning efforts for the next round of subbasin planning. One MSRT member believes this proposal should be a Recommended Action at this time.
**Budget comments:** The MSRT adopted a principal that ISRP Not Fundable proposals were not going to be included in the budget balance exercise.

**200732200 - Ecosystem Economics Model for Willamette Basin Restoration and Conservation**
This proposal also addresses functions under Research K) Human development.
**Sponsor:** David Evans and Associates, Inc.
**Requested FY07:** $425,919 **FY08:** $143,650 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 11 **Prioritization Category:** Recommended Action
**General comments:** This is the only project that addresses cost effectiveness of actions proposed for the FY07-09 process. The proposal builds out from existing biological technical infrastructure that was developed for subbasin planning and recovery planning.

**200735900 - Application and enhancement of monitoring protocols for assessing productivity and watershed condition in headwater subcatchments of the John Day subbasin**
**Sponsor:** US Forest Service (USFS) - Pacific Northwest Research Station
**Requested FY07:** $89,450 **FY08:** $92,880 **FY09:** $97,520
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 12 **Prioritization Category:** Recommended Action
**General comments:** This project would attempt to connect habitat actions with effectiveness monitoring.

**200718000 - Evaluating and prioritizing restoration of riparian habitat for improving in-**

**stream conditions for anadromous salmonids in the Columbia River basin.**
**Sponsor:** US Forest Service (USFS) - Pacific Northwest Research Station
**Requested FY07:** $190,328 **FY08:** $197,144 **FY09:** $210,019
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Do Not Fund
**General comments:** As a USFS effort, more cost share may be appropriate.

**200726200 - Enhanced Landscape Classification to Improve Assessment of Conservation Restoration and Mitigation Projects**
**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $295,911 **FY08:** $306,851 **FY09:** $291,753
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Do Not Fund
**General comments:** More cost share would be appropriate with this project. The purpose of the model goes beyond BPA responsibilities. With the completion of Subbasin Plans and comprehensive subbasin assessments, this project seems out of sync with the Program implementation.

## IV. On-the-Ground Actions (Multi-province)

A) Water/land acquisition

**200201301 - Water Entity (RPA 151) NPCC**
*This project is included in the Multi-province budget category.*
**Sponsor:** National Fish & Wildlife Foundation
**Requested FY07:** $5,000,000 **FY08:** $5,000,000 **FY09:** $5,000,000
**MSRT Recommended FY07:** $3,500,000 **FY08:** $3,500,000 **FY09:** $3,500,000
**Research focal theme:** **Prioritization Category:** Core Program
**General comments:** Called for in 2004 FCRPS Biological Opinion and UPA. The project has recently been expanded to include land rights acquisition. All acquisitions are certified for their biological benefit. Could this project be modified to provide reporting of all water and land rights acquisition for the Program? Does BPA track and report such acquisitions?
**Budget comments:** The administration costs for this project appear very high. It requires approximately $2M in administration to achieve $3M in on-the-ground actions ($1M in conservation easements and $2M in water transactions). In the limited funding environment, the MSRT recommends reducing this project in order to support other Core Program activities in this funding category. The pilot project portion of conservation easements should be concluded. The MSRT believes that this project should be able to continue to acquire $2M in water transactions at this funding level.

**200600600 - Habitat Evaluation Procedures (HEP)**
*This project is included in the Multi-province budget category.*
**Sponsor:** Columbia Basin Fish & Wildlife Authority (CBFWA)
**Requested FY07:** $341,828 **FY08:** $348,308 **FY09:** $364,036
**MSRT Recommended FY07:** $222,000 **FY08:** $222,000 **FY09:** $222,000
**Category:** BPA/Contract Support **Prioritization Category:** High Priority
**General comments:** This project provides a support tool that some, not all, wildlife managers rely on for determining mitigation benefits. Evaluating habitat credits is core to Program; if this project is not funded then more individual projects will have to perform their HEP evaluations. WDFW expressed that this project supports a Core Program function for the administration of the Program.
**Budget comments:** Adjust number of surveys to fit within proposed budget. This project received a within-year request in FY 2006 for a total budget of $222,000.

B) Predator control

**199007700 - Dev Of Systemwide Predator Control for Northern Pikeminnows.**

*This project is included in the Multi-province budget category.*
This proposal also addresses functions under On-the-Ground Actions B) Predator control.
**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)
**Requested FY07:** $3,884,045 **FY08:** $3,990,748 **FY09:** $4,102,784
**MSRT Recommended FY07:** $3,000,000 **FY08:** $3,000,000 **FY09:** $3,000,000
**Monitoring component:** **Prioritization Category:** Core Program
**General comments:** Does increased harvest rate on pike minnow (nearing 20%) relate to a relative increase in salmon survival? The project has undergone a biological and economic review every several years. The reviewers are concerned about the significant increase in budget in 2005. Will the increased biological benefits for salmon be equivalent to the increase in costs, particularly as compared with other alternatives that increase salmon survival?
**Budget comments:** The MSRT recommends reducing the reward portion of the budget. If harvest is successful and the reward portion of the budget requires increasing, the project should pursue the within-year process at that time. The project has been achieving their projected harvest rates, therefore, the dam angling portion of the program could be removed. The project sponsors should determine the most effective way to implement the project at this level of funding. The MSRT recommends focusing on reducing the administration costs of the sport reward fishery.

**199702400 - Avian Predation on Juvenile Salmonids in the Lower Columbia River**

*This project is included in the Multi-province budget category.*
This proposal also addresses functions under On-the-Ground Actions B) Predator control.
**Sponsor:** Oregon State University
**Requested FY07:** $700,000 **FY08:** $860,000 **FY09:** $900,000
**MSRT Recommended FY07:** $470,000 **FY08:** $470,000 **FY09:** $470,000
**Monitoring component:** 5a, 5b **Prioritization Category:** Core Program
**General comments:** There is a funding issue with this project that the Council will want to investigate related to the USACE funding. Most of the avian predation in the mainstem is based off of dredge pilings. Although there is significant monitoring involved in this project, the MSRT ranks it as an on-the-ground because of its direct benefits to salmon survival.
**Budget comments:** The MSRT recommends funding this project at 2006 levels.

C) Mainstem habitat and water quality improvements
D) Fish passage improvements

**200725600 - Physical and Biological Testing of a Flow Velocity Enhancement System**

**Sponsor:** Natural Solutions
**Requested FY07:** $251,546 **FY08:** $330,691 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** This project should be considered within the USACE AFEP research process. The effort is mainly focused at mainstem federal dams in the far forebay to entrain fish prior to the confused currents directly in front of the dams. This request is for phase one of the evaluation. This work needs to be well coordinated with other passage improvement projects to insure no overlap and integration with other research efforts by the USACE.

E) Artificial production

**199606700 - Manchester Spring Chinook Captive Broodstock Project**

*This project is included in the Multi-province budget category.*
**Sponsor:** National Oceanic & Atmospheric Administration (NOAA)
**Requested FY07:** $795,407 **FY08:** $636,326 **FY09:** $572,694

**MSRT Recommended FY07:** $795,407 **FY08:** $636,326 **FY09:** $572,694
**Research focal theme:** **Prioritization Category:** High Priority
**General comments:** This project must be funded to complete the evaluation of salt water rearing for captive brood stocks and implement a spread the risk strategy for Idaho stocks. It is identified as a 2004 Biological Opinion and UPA project. It was determined a High Priority project because this project may not continue after this funding cycle as a core program element, depending on the final evaluation.
**Budget comments:** No comments.

**199703800 - Listed Stock Chinook Salmon Gamete Preservation**

*This project is included in the Multi-province budget category*.
This proposal also addresses functions under Research A) Hatcheries Artificial Propagation
**Sponsor:** Nez Perce Tribe
**Requested FY07:** $339,525 **FY08:** $354,522 **FY09:** $362,233
**MSRT Recommended FY07:** $308,447 **FY08:** $308,447 **FY09:** $308,447
**Research focal theme:** **Prioritization Category:** High Priority
**General comments:** This project collects gametes to support the safety net Program initiated in previous biological opinions. This project should be reviewed with all hatchery projects.
**Budget comments:** The MSRT recommends funding this project at 2006 levels.

F) Harvest management

## V. Sturgeon (Monitoring and Evaluation, Research, and On-the-ground Actions)

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.

The MSRT recommended funding only the ongoing sturgeon proposal of the Mainstem and Systemwide proposals. A comprehensive management plan for sturgeon is a High Priority need. CBFWA is working on a critical uncertainties document for Columbia River sturgeon.

**198605000 - White Sturgeon Mitigation and Restoration in the Columbia and Snake Rivers Upstream from Bonneville Dam**

*This project is included in the Multi-province budget category*.
**Sponsor:** Oregon Department of Fish & Wildlife (ODFW)
**Requested FY07:** $1,613,363 **FY08:** $1,591,637 **FY09:** $1,613,212
**MSRT Recommended FY07:** $1,431,916 **FY08:** $1,431,916 **FY09:** $1,431,916
**Monitoring component:** 1, 2a, 5b, 5c **Prioritization Category:** Core Program
**General comments:** A large portion of the project should be considered on-the-ground (trap and haul juvenile sturgeon above the lower dams). This project is also the primary monitoring project for sturgeon on the lower river.
**Budget comments:** The proposal is supported through collaboration between several entities. Those entities need to restructure this proposal to fit within the FY06 (a reduced) budget level.

**200713300 - Systemwide distribution of genetic variation within and among populations of the white sturgeon (Acipenser transmontanus)**

**Sponsor:** University of California at Davis
**Requested FY07:** $303,737 **FY08:** $247,741 **FY09:** $245,704
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 7 **Prioritization Category:** Recommended Action
**General comments:** The sturgeon proposals should be reviewed together. The results of the current

sturgeon workshop would help in prioritizing the sturgeon proposals. A comprehensive management plan for sturgeon is a High Priority need.

**200721300 - Assessing Recruitment Failure Across White Sturgeon Populations: Differences in Prey Availability and Physical Habitat Among Areas with Consistent, Inconsistent, and no Annual Recruitment to Age-1**

**Sponsor:** US Geological Survey (USGS) – Cook
**Requested FY07:** $547,057 **FY08:** $773,105 **FY09:** $727,882
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Recommended Action
**General comments:** The sturgeon proposals should be reviewed together. The results of the current sturgeon workshop would help in prioritizing the sturgeon proposals. A comprehensive management plan for sturgeon is a High Priority need.

**200714800 - Monitoring and Models for Restoration and Adaptive Management of White Sturgeon in the Columbia River Basin**

**Sponsor:** US Geological Survey (USGS) – Cook
**Requested FY07:** $153,282 **FY08:** $281,257 **FY09:** $264,040
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 7 **Prioritization Category:** Recommended Action
**General comments:** The sturgeon proposals should be reviewed together. The results of the current sturgeon workshop would help in prioritizing the sturgeon proposals. A comprehensive management plan for sturgeon is a High Priority need.

**200715500 - Develop a Master Plan for a Rearing Facility to Enhance Selected Populations of White Sturgeon in the Columbia River Basin**

**Sponsor:** Columbia River Inter-Tribal Fish Commission (CRITFC)
**Requested FY07:** $141,687 **FY08:** $145,040 **FY09:** $148,491
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** **Prioritization Category:** Recommended Action
**General comments:** Request is for the planning phase of the project only. This project addresses a known limitation on sturgeon production (no recruitment in lower river reservoirs). There is currently no overall sturgeon management plan that identifies the long term needs for sturgeon in the lower river. CRITFC believes this should be a High Priority project to protect the long term existence of sturgeon in the lower reservoirs. The MSRT believes there is a high priority need to develop a basinwide sturgeon plan for the Program.

**200737100 - Documentation of food-web linkages in the mainstem Columbia River towards understanding the role of invasive species and establishing a baseline trophic state**

**Sponsor:** Columbia River Research Laboratory
**Requested FY07:** $209,774 **FY08:** $232,226 **FY09:** $105,146
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 10 **Prioritization Category:** Recommended Action
**General comments:** No comments.

## VI. Lamprey (Monitoring and Evaluation, Research, and On-the-ground Actions)

The MSRT recommends that all four lamprey proposals 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.

The MSRT recommends funding lamprey proposals that are focused on coordination of lamprey abundance and distribution data across the basin, consistent with the Lamprey Technical Work Group's critical uncertainties document. The lamprey projects should be closely coordinated with the LTWG.

**200706300 - Use of drift nets to monitor production and limiting factors in recruitment of larval Pacific lamprey**

**Sponsor:** Oregon State University
**Requested FY07:** $122,284 **FY08:** $124,379 **FY09:** $126,713
**MSRT Recommended FY07:** $90,000 **FY08:** $90,000 **FY09:** $90,000
**Research focal theme:** 12 **Prioritization Category:** High Priority
**General comments:** This project is a follow up to a previous study that established the methodology. The primary purpose of the project is to evaluate the limiting factors affecting lamprey. If funded, this project needs to be strongly coordinated with the USGS project (200716500).
**Budget comments:** The MSRT recommends funding this proposal with close coordination to the USGS project (200716500), consistent with the ISRP review. The MSRT recommends funding at a level to focus on evaluating lamprey abundance and distribution in the Willamette Basin, not to exceed a 3-year average of $90,000 annually.

**200716500 - Relative abundance, distribution, and population structure of lampreys in the Columbia River Basin**

**Sponsor:** Columbia River Research Laboratory
**Requested FY07:** $667,711 **FY08:** $900,464 **FY09:** $1,001,775
**MSRT Recommended FY07:** $500,000 **FY08:** $500,000 **FY09:** $500,000
**Monitoring component:** 1 **Prioritization Category:** High Priority
**General comments:** It is important this project be closely coordinated with the other lamprey projects and the Lamprey Technical Work Group. Some members of the MSRT believe that this project should be Core Program project due to the lack of information available for lamprey in the basin.
**Budget comments:** The MSRT recommends funding reductions for FY 2007 (Fund Tasks 1.1, 1.2, and 1.3). For FY 2008 and 2009, the sponsor should sequence the tasks to meet the reduced funding level. Funding this project is a priority. The tasks should be defined to meet the lower budget target. It is assumed that the pace of sampling would be reduced to match a reduced funding level, to average $500,000 over the three year funding period.

**200702200 - Characterizing stress responses in lampreys: assessments based on cDNA microarrays**

**Sponsor:** Columbia River Research Laboratory
**Requested FY07:** $191,116 **FY08:** $226,225 **FY09:** $225,658
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 2 **Prioritization Category:** Recommended Action
**General comments:** This limiting factor ranked in a high category in the Lamprey critical uncertainties document. The MSRT struggled with the management context of this study. The MSRT does not believe that this is a High Priority need at this time.

**200718700 - Use of Mainstem Habitats by Juvenile Pacific Lamprey (Lampetra tridentata)**

**Sponsor:** Pacific Northwest National Laboratory
**Requested FY07:** $144,910 **FY08:** $166,255 **FY09:** $100,033
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 3 **Prioritization Category:** Recommended Action
**General comments:** This proposal would address critical uncertainties identified by the LTWG. This is a High Priority issue that is being addresses by several proposals. These proposals should be

reviewed as a group to determine the priorities for this funding cycle.

## VII. Mussels

**200203700 - Freshwater Mussel Research and Restoration Project**

**Sponsor:** Confederated Tribes of the Umatilla Indian Reservation
**Requested FY07:** $294,953 **FY08:** $293,713 **FY09:** $352,316
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 12 **Prioritization Category:** Recommended Action
**General comments:** This project appears to have two distinct parts: 1) restoration activities in the Umatilla subbasin (and possibly others), and 2) genetic analysis of mussels in several subbasins. This project would be more appropriately reviewed in the subbasin processes. This project may fit into PNAMP's vision for monitoring high level indicators. Some MSRT members believe that certain elements of this project may be High Priority.

**200707800 - Characterizing the Geographic Distribution of Freshwater Mussels in the Columbia Basin Using Museum Collection Data.**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**FY07:** $30,500 **FY08:** $8,200 **FY09:** $0
**Monitoring component:** 1 **Prioritization Category:** Recommended Action
**General comments:** This project would sample museum collections to begin creating distribution estimates.

**200717600 - A Freshwater Mussel Watch for Biomonitoring in the Columbia River Basin**

This proposal also addresses functions under Monitoring and Evaluation A) High level indicators.
**Sponsor:** Confederated Tribes of the Umatilla Indian Reservation
**Requested FY07:** $276,971 **FY08:** $313,691 **FY09:** $302,043
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Monitoring component:** 1 **Prioritization Category:** Recommended Action
**General comments:** This project addresses a habitat monitoring question, how should we be monitoring water quality? What other entities have water quality M&E responsibility and how should they be coordinated/partnered with for common data needs? Should we use a suite of species for establishing indices? This project would sample one subbasin in each state. There is a direct link to salmon in that they are the intermediate host for mussels. Level of FCRPS responsibility?

**200729100 - Developing and Assessing Freshwater Mussel Distribution, Abundance and Life History Survey Methods in the Columbia Basin in Washington.**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $55,330 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** 12 **Prioritization Category:** Recommended Action
**General comments:** The MSRT is reviewing this proposal on the basis of protocol development.

## VIII. Multi-province or Subbasin

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.

The Council staff requested that the MSRT maintain the budget allocations separately for Basinwide and Multi-province.

**199706000 - Focus Watershed Coordinator - Nez Perce Tribe**

*This project is included in the Multi-province budget category.*
**Sponsor:** Nez Perce Tribe
**Requested FY07:** $411,315 **FY08:** $431,469 **FY09:** $459,510
**MSRT Recommended FY07:** $140,000 **FY08:** $140,000 **FY09:** $140,000
**Category:** Multi-province **Prioritization Category:** Multi-province
**General comments:** This project would be more appropriately reviewed in subbasin processes. The criteria that the MSRT developed for reviewing proposals do not support an adequate review of this proposal. This project should be reviewed with other multi-province projects with criteria established for that review.
**Budget comments:** This funding supports coordination. The level of funding, held at the FY06 level, will determine the amount of coordination that can be achieved.

**200718300 - Restoration of Historical Salmonid Habitat in South West Idaho**

*This project is included in the Multi-province budget category.*
**Sponsor:** Southwest Idaho RC&D
**Requested FY07:** $382,000 **FY08:** $336,000 **FY09:** $338,000
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Category:** Multi-province **Prioritization Category:** Multi-province
**General comments:** This project would be more appropriately reviewed in the Salmon subbasin and the Boise and Payette subbasins. The criteria that the MSRT developed for reviewing proposals does not support an adequate review of this proposal. This project should be reviewed with other multi-province projects with criteria established for that review. The MSRT provided a Recommended Action priority to keep the project alive for the local review process. The MSRT was concerned that ranking this a Do Not Fund for mainstem systemwide funding could have negative ramifications in the local review.
**Budget comments:** The MSRT adopted a principal that ISRP Not Fundable proposals were not going to be included in the budget balance exercise.

**200705900 - Abiotic and Biotic Factors Affecting the Success of Reintroductions of Anadromous Salmonids in Cle Elum Lake, Washington**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $373,544 **FY08:** $367,132 **FY09:** $364,075
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Subbasin **Prioritization Category:** Subbasin
**General comments:** This project will pave the way for a sockeye reintroduction program in Cle

Elum Lake. This project would be more appropriately reviewed in subbasin process. This is an on-the-ground action that is wholly contained in the Yakima subbasin.

**200707300 - Dynamics of Gravel Spawning Beds in Lake Pend Oreille, ID**

**Sponsor:** Woods Hole Oceanographic Institution
**Requested FY07:** $235,068 **FY08:** $361,079 **FY09:** $290,357
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Subbasin **Prioritization Category:** Subbasin
**General comments:** This project will develop predictive tools to better understand sediment transport of potential spawning gravels for Kokanee in Lake Pend Oreille. This project would be more appropriately reviewed in the subbasin process. This is an on-the-ground project occurring wholly in the Pend Oreille subbasin.

**200709100 - The evaluation of limiting factors on resident and anadromous salmonids in Lake Wenatchee, Washington**

**Sponsor:** Washington Department of Fish and Wildlife (WDFW)
**Requested FY07:** $489,210 **FY08:** $433,814 **FY09:** $447,380
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Subbasin **Prioritization Category:** Subbasin
**General comments:** This project will look at predation and other limiting factors (i.e., nutrients) for sockeye in Lake Wenatchee. This is an on-the-ground action that is wholly contained in the Wenatchee subbasin.

**200716400 - Determination of Steelhead Production and Productivity Response to Habitat Manipulations in the Upper Potlatch River, Idaho**

**Sponsor:** Idaho Department of Fish & Game
**Requested FY07:** $262,126 **FY08:** $237,926 **FY09:** $241,767
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Subbasin **Prioritization Category:** Subbasin
**General comments:** This is a project to assess the benefit of habitat actions in the Potlatch River to benefit steelhead production. This project would be more appropriately reviewed in the subbasin process. This is an on-the-ground project occurring wholly in the Clearwater subbasin.

**200726100 - Habitat effectiveness survey of existing, historical, and potential beaver habitat in the Upper Columbia Basin, Methow Subbasin**

**Sponsor:** Pacific Biodiversity Institute
**Requested FY07:** $79,240 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Subbasin **Prioritization Category:** Subbasin
**General comments:** This project evaluates historic distribution of beaver habitat and will transplant beaver into suitable habitat as a restoration action. This project would be more appropriately reviewed in the subbasin process. This is an on-the-ground project occurring wholly in the Methow subbasin.

**200729200 - Effectiveness Monitoring of In-Stream Habitat Restoration in the Lower Entiat Basin at Microhabitat and Reach Scales**

**Sponsor:** US Forest Service (USFS) - Pacific Northwest Research Station
**Requested FY07:** $63,973 **FY08:** $61,558 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Subbasin **Prioritization Category:** Subbasin
**General comments:** This project will monitor the response of juvenile fish populations to rearing habitat restoration actions. This project would be more appropriately reviewed in the subbasin process. This is an on-the-ground project occurring wholly in the Entiat subbasin.

**200733200 - Mitigation of marine-derived nutrient loss in the Boise-Payette-Weiser subbasin**

**Sponsor:** Idaho Department of Fish & Game
**Requested FY07:** $351,037 **FY08:** $360,084 **FY09:** $367,509
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Subbasin **Prioritization Category:** Subbasin
**General comments:** This is a pilot project to develop a technique for mitigating for loss of marine derived nutrients in anadromous streams. This issue was addressed in a previous Council innovative project solicitation. This project would be more appropriately reviewed in the subbasin process. This is an on-the-ground project occurring wholly in the Middle Snake Province. BPA would expect to see significant cost share in this study area.

**200737500 - Does the Decline of Idaho's Sockeye Salmon Correlate with a Mountain Beetle Infestation?**

**Sponsor:** bluefish.org
**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Subbasin **Prioritization Category:** Subbasin
**General comments:** This project investigates the impacts of the elimination of sockeye salmon from the ecological function of Idaho subbasins. This project would be more appropriately reviewed in the subbasin process. This is an on-the-ground project occurring in the Upper Snake province.

## IX. Dam Removal Studies

This is a FY 2007-2009 funding cycle. Currently there is no pending legislation for authorization of dam removal. Some of these questions were addressed in the USACE Lower Snake River Feasibility Study. If authorization were granted for dam removal, the most likely funding source for this type of activity would be through Congressional appropriations to the USACE. Review of this type of work would more appropriately be performed by the IEAB.

**200737800 - Investigating Reservoir Sediment Concerns of a Restored Free-Flowing Lower Snake River**

**Sponsor:** bluefish.org
**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Dam Removal **Prioritization Category:** Do Not Fund
**General comments:** This proposal investigates a pre-dam removal activity. Not likely a BPA obligation.

**200737900 - Surveying Jobs that Depend on the Existence of Lower Snake River Reservoirs**

**Sponsor:** bluefish.org
**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Dam Removal **Prioritization Category:** Do Not Fund
**General comments:** This is a FY 2007-2009 funding cycle. Currently there is no pending legislation for authorization of dam removal. Some of these questions were addressed in the Lower Snake River Feasibility Study. If authorization was granted for dam removal, the most likely funding source for this type of activity would be through Congressional appropriations to the USACE. Review of this type of work would more appropriately be performed by the IEAB.

**200738000 - Keeping Irrigators Whole in the Event of Reservoir Removal**

**Sponsor:** bluefish.org
**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0

**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Dam Removal **Prioritization Category:** Do Not Fund
**General comments:** This is a FY 2007-2009 funding cycle. Currently there is no pending legislation for authorization of dam removal. Some of these questions were addressed in the Lower Snake River Feasibility Study. If authorization was granted for dam removal, the most likely funding source for this type of activity would be through Congressional appropriations to the USACE. Review of this type of work would more appropriately be performed by the IEAB.

**200738300 - Keeping Commodity Shippers Whole in the Event of Reservoir Removal**

**Sponsor:** bluefish.org
**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Dam Removal **Prioritization Category:** Do Not Fund
**General comments:** This is a FY 2007-2009 funding cycle. Currently there is no pending legislation for authorization of dam removal. Some of these questions were addressed in the Lower Snake River Feasibility Study. If authorization was granted for dam removal, the most likely funding source for this type of activity would be through Congressional appropriations to the USACE. Review of this type of work would more appropriately be performed by the IEAB.

**200738400 - Reducing the Cost of Reservoir Removal**

**Sponsor:** bluefish.org
**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Dam Removal **Prioritization Category:** Do Not Fund
**General comments:** This is a FY 2007-2009 funding cycle. Currently there is no pending legislation for authorization of dam removal. Some of these questions were addressed in the Lower Snake River Feasibility Study. If authorization was granted for dam removal, the most likely funding source for this type of activity would be through Congressional appropriations to the USACE. Review of this type of work would more appropriately be performed by the IEAB.

**200738600 - Estimating Bonneville Power Administration Revenue Effects in the Event of Reservoir Removal**

**Sponsor:** bluefish.org
**Requested FY07:** $10,000 **FY08:** $0 **FY09:** $0
**MSRT Recommended FY07:** $0 **FY08:** $0 **FY09:** $0
**Research focal theme:** Dam Removal **Prioritization Category:** Do Not Fund
**General comments:** This is a FY 2007-2009 funding cycle. Currently there is no pending legislation for authorization of dam removal. Some of these questions were addressed in the Lower Snake River Feasibility Study. If authorization was granted for dam removal, the most likely funding source for this type of activity would be through Congressional appropriations to the USACE. Review of this type of work would more appropriately be performed by the IEAB.

**Appendix 1.** Program priorities for compartments within the Mainstem and Systemwide proposals for BPA funding in FY 2007-2009 (April 7, 2006).

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 Council 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

1) Fish and Wildlife Manager Coordination/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).
2) Council support – ISRP & ISAB
3) BPA/Contract Support
4) Monitoring and Evaluation Coordination - Coordination of monitoring and evaluation for habitat conditions and artificial production.
5) Research Coordination/Support
6) Coordination of information dissemination

**Regional Data Management**

1) Support mainstem passage monitoring
2) Data management projects
    - 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**

1) High level indicators
2) Fish and wildlife population status, trends and survival, and
    a. Hydro system status & trend
    b. Hydro action effectiveness
    c. Habitat (mainstem & tributary) status and trend
    d. Habitat (mainstem & tributary) action effectiveness
    e. Hatchery status and trend
    f. Hatchery action effectiveness
    g. Harvest status and trend
    h. Harvest action effectiveness
    i. Estuary and Ocean status and trend
    j. Estuary action effectiveness
    k. Predation:

-Predator population census
-Predator control effectiveness

3) Water/land acquisition tracking

**Research**

1) Hatcheries/Artificial Propagation
2) Hydrosystem
3) Tributary and Mainstem Habitat
4) The Estuary
5) The Ocean
6) Harvest
7) Population Structure and Diversity
8) Effects of Climate Change on Fish and Wildlife
9) Toxics
10) Invasive Species
11) Human Development
12) 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

**Appendix 2a.** Revised Monitoring and Evaluation Questions for Mainstem Systemwide Review (April 7, 2006).

| 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 in-river 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 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 |

| **Monitoring Component** | **What do we want to know?** |
|---|---|
| | 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? |

**Appendix 2b.** Focal Themes and Critical Uncertainties from the Columbia River Research Plan (NPPC approved February 2006).

| Focal Research Themes | Critical Uncertainties |
|---|---|
| (1) Hatcheries/Artificial Production | *Conventional Hatchery Production—*<br>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?<br>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)?<br>*Supplementation—*<br>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?<br>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?<br>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?<br>*All Hatcheries—*<br>6. What is the relationship between basinwide hatchery production and the survival and growth of naturally produced fish in freshwater, estuarine, and oceanic habitats?<br>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)?<br>2. Under what conditions is delayed mortality related to a fishes downstream migration experience and the magnitude of that delayed hydrosystem mortality?<br>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?<br>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? |

| Focal Research Themes | Critical Uncertainties |
|---|---|
| | 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 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?<br>2. Are the current procedures being used to identify limiting habitat factors accurate?<br>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?<br>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?<br>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)?<br>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?<br>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?<br>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?<br>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?<br>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?<br>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?<br>2. How do artificial production and supplementation impact the maintenance or restoration of an ecologically functional meta-population structure?<br>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?<br>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?<br>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?<br>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?<br>2. How do toxic substances, alone and in combination, affect fish and wildlife distribution and abundance, survival, and productivity? |

| Focal Research Themes | Critical Uncertainties |
|---|---|
| (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)?<br>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?<br>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? |
| (11) Human Development | 1. What changes in human population density, distribution, and economic activity are expected over the next 20 years? 50 years?<br>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. Develop a sound census monitoring procedure (Action Agency Tier 1) for trend, based on remote sensing, photography, and data layers in a GIS. Landscape changes in terrestrial and aquatic habitat and land use should be monitored for the smallest units (i.e., pixels or sites) possible.<br>2. Can a common probabilistic (statistical) site selection procedure for population and habitat status and trend monitoring be developed cooperatively?<br>3. Can a scientifically credible trend monitoring procedure based on remote sensing, photography, and data layers in a GIS format be developed?<br>4. Make best professional judgment, based on available data, as to whether any new research in the spirit of the Intensive Watershed Monitoring approach should be instigated immediately. Most new intensive research should arise as a result of the interaction of existing inventory data with new data arising in population and habitat status and trend monitoring.<br>5. 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? |

**Appendix 3.** Revised Proposal Review Questions for the Mainstem Systemwide Review Team (April 7, 2006).

| **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 timeframe 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 Council 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.

**Appendix 4.** Revised Mainstem Systemwide Review Team (MSRT) prioritization categories for FY 2007-2009 proposal reviews (April 7, 2006).

- 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 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 Council 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.

**Appendix 5.** MSRT Budget Recommendations Worksheet

- The Excel Budget Recommendations Worksheet *FinalMSRTrec2006_0727(appendix5)* detailing all the MSRT budget comments is attached to the email dated 7/28/06 in which this Word document was transmitted.

- The table is best printed on legal size paper. Please note that the worksheet contains a column titled "July 27 Final MSRT Rec. Page #" which can be used as a cross-reference to locate projects within the Mainstem Systemwide Review Team, July 27, 2006 Final Recommendations document. The first page number listed is the dominant listing. Additional pages listed indicate where the project was referenced within another category.

H:\WORK\FY07-09MainstemSystemwideReview\FinalMSRTrec072706.doc