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June 1, 2010

Categorical Review of Research, Monitoring, Evaluation, Artificial Production, Enforcement, Predation, Regional Coordination and other system wide projects for Fiscal Years 2011-2014.

Dear Project Proponent,

The Northwest Power and Conservation Council (Council) and the Bonneville Power Administration (Bonneville) will soon be starting a categorical review of all research, monitoring, and evaluation (RM&E), artificial production, and basin-wide projects in the Council's Fish and Wildlife Program (Program), consistent with the Council's responsibilities under Section 4(h)(10)(D) of the Northwest Power Act. As provided for in the Act, the categorical review will involve reviews by the Independent Scientific Review Panel (ISRP), the public, and the Council and will culminate in recommendations from the Council to Bonneville. The categorical review will have some unique features, however, as described in the attached project-review information package.

Categorical Review

Categorical reviews will enable the Council, the ISRP and Bonneville to review all similar projects (such as fish tagging projects or lamprey projects) funded or proposed for funding through the Program. The advantage of such a broad review is that it can highlight issues common to similar projects such as relevancy, duplication, coordination, scope, and consistency with the broad basin-wide objectives and provisions in the Fish and Wildlife Program. Past project reviews did not compare similar project types in context with one another. The RM&E and artificial production categorical review will include over 190 projects and encompass the largest percentage of Program projects in terms of both funding and diversity.

The Council's 2009 Fish and Wildlife Program focused on performance and committed to developing a monitoring and evaluation framework to improve reporting of Program progress and to inform Council decisions. From this commitment, the Council developed and recently completed accepting comments about a draft Monitoring, Evaluation, Research and Reporting (MERR) Plan. The Council views the concepts in the draft MERR as important to this categorical review and will continue to refine the MERR during the review. For example, the draft MERR proposes placing priority on monitoring higher-risk projects rather than tried-and-

tested projects that are generally considered lower risk (such as riparian fencing, riparian planting and culvert replacements). The Council may consider this and other aspects of the MERR, as the Council and the region work to develop the MERR further over the next several months. This should not be interpreted as diminishing the Council's commitment to such lower risk projects, rather recognition that differing levels of RM&E may be appropriate.

In furtherance of more coordination, efficiency and effectiveness of monitoring and evaluation within the Columbia Basin, the Council believes that in conducting this categorical review, these key questions should be addressed by all project sponsors:

- 1) What question does your project answer, at what spatial scales over what time period, and for what priority species, limiting factors or habitats?
- 2) How does your project inform a high-level indicator, provide data required to implement the Biological Opinion, or answer a management question?
- 3) What have you learned from the project and how will on-the-ground activities be adapted as a result?
- 4) How your data are made accessible to others and who will likely be the primary users of the data? Can you describe the level of confidence or uncertainty associated with these data?
- 5) How have you communicated the major lessons learned? What have been the major accomplishments of your project to date? Sponsors of all ongoing projects are asked to provide a summary table of their data that illustrates the value of the data collected.
- 6) What have your costs been to date, what do you expect to need in the future and what have you done to coordinate with other monitoring efforts?
- 7) Has the effectiveness of similar projects been measured in the region or is the effectiveness being measured now?
- 8) To what extent is monitoring data provided by a broader monitoring project, perhaps making individual project monitoring unnecessary?

During the science review phase of this categorical review the Council will be asking the ISRP to report on these aspects specifically, in addition to the other usual components considered by the ISRP.

Program funding for hatcheries and hatchery-related activities accounts for approximately 25 percent of the Program. The Council seeks to improve the effectiveness of Program-funded hatcheries and reduce the negative effects on wild populations. The region continues to conduct in-depth reviews of hatchery operations and effectiveness. These reviews include the Hatchery and Genetic Management Plans (HGMPs) and the Hatchery Science Review Group's

(HSRG) report. While the Council has not yet considered the HSRG report for possible adoption into the Fish and Wildlife Program, the Council supports the general principles and scientific analysis of the HSRG to the extent to which they are consistent with the Program. The Council wants to know whether projects meet these principles or contain adequate alternative strategies for achieving them. The Council will ask the ISRP to consider the results of these in-depth reviews during the science review in an effort to understand the potential effectiveness of hatchery programs.

Thank you for your efforts to implement the Fish and Wildlife Program. We look forward to working with you during the review process.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce A. Measure". The signature is fluid and cursive, with a long horizontal stroke at the end.

Bruce A. Measure
Chair



June 1, 2010

Categorical Review of RM&E/Artificial Production, Plus¹ for Fiscal Years 2012-2016

Dear Project Proponents:

The Northwest Power and Conservation Council (Council) and Bonneville Power Administration (Bonneville) begin the categorical review of all Research Monitoring and Evaluation (RM&E) and Artificial Production (AP) projects in the Council's Fish and Wildlife Program (Program) on June 1, 2010.

This packet contains the information you and your staff will need to complete the project proposal(s) forms, as well as other guidance, tips, important dates and contact information. All information contained in this packet also can be found on the Council's website at:

<http://www.nwcouncil.org/fw/budget/2010/rmeap>. **Proposals are due by midnight July 30th 2010.**

The first step in the process is to collect information on the work you propose to accomplish as well as information documenting any past accomplishments. The Council will use this information and reviews by the Independent Scientific Review panel (ISRP) to make project implementation recommendations to Bonneville. The Council's implementation recommendations will span up to five years (Fiscal Years 2012 - 2016) for artificial production projects and up to three-years (Fiscal Years 2012 - 2014) for all other projects.

I. Background and Guidance

The Council and Bonneville are using the categorical review to ensure that RM&E implemented under the Program meets the performance-tracking and adaptive management needs and commitments of the Program and the 2008 Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp)².

¹ Includes Enforcement, Predation, water transactions and other system wide projects

² 2008 NOAA FCRPS BiOp RPA Table and BA Appendix B RM&E www.salmonrecovery.gov; and the AA/NOAA/NPCC BiOp RM&E Recommendations Report (May 2010) <http://www.salmonrecovery.gov/ResearchReportsPublications.aspx>.

This categorical review includes most of the projects referred to in the past as mainstem and systemwide projects including water transaction program and enforcement projects. The review will consider project-specific issues and cross-cutting issues unique to the category and sub-category (e.g. tagging projects).

The list of projects included in this categorical review is available at <http://www.cbfish.org/Portfolio.mvc/Display/484>³. The list encompasses all category-appropriate projects including those that have undergone Council and ISRP review since the FY 2007-2009 review process. Recently reviewed projects are included to provide context for the other RM&E/AP projects that have not been reviewed recently (see page 3 for more details).

This review includes currently funded projects as well as new projects that address gaps in the Program and FCRPS BiOp that were identified in the 2009 collaboration process with regional fish management agencies (i.e., Skamania workshop). For this review, proponents should propose work at or near current funding levels even if the project expresses a shift in work elements to accommodate BiOp priorities. Cost-of-living adjustments will be identified at a programmatic level in future budget-planning process.

While this process is *not* an open solicitation for new projects outside of currently-funded projects or those identified at the Skamania Workshop, an anticipated outcome of the categorical review is identification of gaps in the Program or FCRPS BiOp that are not covered by the proposed set of actions. Gap-filling work will be requested through targeted solicitations; advanced in a separate letter(s) by the Council and Bonneville; and posted on the Council's website at a later time.

The following projects will undergo a separate review subsequent to the Council's categorical reviews:

1. RM&E for resident fish and blocked areas and habitat projects;
2. Data management projects included in <http://www.cbfish.org/Portfolio.mvc/Display/526>;
3. Regional coordination projects <http://www.cbfish.org/Portfolio.mvc/Display/385> ; and
4. Lower Snake River Compensation Plan projects and the Leavenworth Hatchery.

The Council and Bonneville have shifted from the old proposal form to the Taurus system available on cbfish.org. The new proposal form reflects the same basic narrative questions as the old proposal form, but includes additional questions tailored to particular project types (e.g., tagging, artificial production, etc.). The new form is an improvement on the old forms, allowing for data searches of the entire proposal, providing better links to Pisces information, and offering the potential to advance consistency of methods and protocols across the program.

³ All inclusive list; for sub-category portfolios see:

- RM&E: <http://www.cbfish.org/Portfolio.mvc/Display/384>
- Artificial Production <http://www.cbfish.org/Portfolio.mvc/Display/387>
- Harvest/Predation/Other: <http://www.cbfish.org/Portfolio.mvc/Display/394>
- Contextual review only: <http://www.cbfish.org/Portfolio.mvc/Display/528>

The current list of projects identified for review may be found at <http://www.cbfish.org/Portfolio.mvc/Display/484>. All projects in the upcoming categorical review fall under one of three groups. Each group has its own instructions for submission of project information as outlined below:

(1) Existing projects *not* reviewed since the FY 2007-2009 Project Review process

Proponents of these projects will complete the proposal form for their project under its currently assigned project number. Previous proposal information will be pre-loaded into Taurus to the greatest extent possible. Proponents will need to update and augment the current project information in Taurus to reflect future proposed work (including any expansion work identified as BiOp critical in the Skamania workshop).

(2) Projects reviewed by the Independent Scientific Review Panel (ISRP) since November 2008 and that received a subsequent Council funding recommendation

This group includes Accord, Fast-Track, Step Review and new BiOp projects that have been reviewed by the ISRP since November 2008 *and* have received a funding recommendation by the Council. These projects will not undergo a repeat proposal review by the ISRP and Council. However, the Council and Bonneville have committed to make these projects available to the ISRP for purposes of contextual review. The ISRP and Council will use the information from the most recent ISRP/Council review along with additional information provided by proponents to gain a better understanding of how similar projects can work together in the basin to address key Program strategies or topics. For a list of projects to be reviewed for context only, see <http://www.cbfish.org/Portfolio.mvc/Display/528>.

If these projects have not been entered into Taurus, Bonneville staff will transfer current information contained in proposals into Taurus.

Bonneville also will ask the project proponents to validate information entered by Bonneville staff and existing project information imported from Pisces within the Taurus proposals. Bonneville will also ask project proponents to augment the proposals with information on indicators, methods, designs associated with data collection and analysis and the databases supporting BiOp requirements.

(3) New BiOp and Accord projects

This category includes new BiOp projects identified at the Skamania workshop and new Accord projects.

All projects in this review group have been identified and assigned a project number in Taurus, but have not yet completed a proposal form or have not yet received a final review from the ISRP. Generally, these projects will be classified as “development” in the Status column of the portfolio.

Proponents of Accord projects that have not been reviewed by the ISRP will need to provide information about the new project by completing the new RM&E proposal form in Taurus using the assigned project number. The project will be reviewed in this categorical review.

New projects identified at the Skamania RM&E workshop to fill gaps in the FCRPS BiOp have been assigned a number in Taurus and must also enter new project information to complete the proposal for this categorical review.

II. Schedule and General Information

Process Steps and Schedule

This letter marks the start of the “sponsor report” phase in which project proponents update and complete their project proposals. **Final proposals are due by midnight Friday, July 30th, 2010.** The Council will make all proposals available to the ISRP for review on August 2. The complete review schedule is set forth in the timeline on page 8.

ISRP Review

The ISRP will review all new proposals and existing proposals not evaluated after FY 2007-09 using criteria from the 1996 Amendment to the Northwest Power Act. The amendment states that the ISRP’s project recommendations be based on a determination that projects are based on sound science principles; benefit fish and wildlife; have clearly defined objectives and outcomes; have provisions for monitoring and evaluation of results; and are consistent with the Council’s Fish and Wildlife Program. The ISRP will also consider specific tailored questions or requests for scientific information regarding the proposals from the Council, such as the relationship of the proposal to the Draft Monitoring, Evaluation, Research and Reporting (MERR) framework or Hatchery Scientific Review Group (HSRG) analyses.

For existing projects, the ISRP review will focus primarily on past project performance and any significant changes in project emphasis that are anticipated. These include accomplishments, reporting of results, whether expected results are being achieved, and whether the project’s proposed objectives, actions, and methods reflect new information gained from those results. The ISRP also will evaluate the results reported in this categorical review in its “retrospective” review of the results of prior-year Program expenditures (see [ISRP 2006 Retrospective Report](#)).

The ISRP will conduct a **preliminary review of proposals from August 2 through October 14.** Proposals will be grouped in logical groupings or subcategories by topic area and geography to the extent possible. To produce the preliminary review, at least three reviewers will evaluate each proposal independently and provide comments. The ISRP will not make individual reviewer comments publicly available or specifically identify reviewers of a particular project. The review team will include past reviewers of a project and scientists with expertise in a project’s emphasis.

During the preliminary review process, project presentations will be organized and included, possibly involving site visits if necessary, to share information across projects, add context to the

proposals, and provide an opportunity for dialogue between the ISRP and project proponents (see below for details on scheduling).

The ISRP's preliminary report will provide written recommendations and constructive comments reflecting the consensus of the ISRP on each proposal that is amenable to scientific review. If the proposal does not contain sufficient information or issues need to be clarified, **the ISRP will request a response from the project proponent by November 15.**

The ISRP will review these responses and complete a **final report by December 16.** This report will include final recommendations on all proposals and findings on programmatic issues related to these proposals, such as identification of gaps, opportunities for coordination, and potential areas of redundancy.

Although the ISRP generally will not make project-specific recommendations on projects reviewed after November 2008 (e.g. recently reviewed Accord, Step, and Fast Track proposals), those projects will be considered in the context of Council questions and other related proposals. This contextual review could inform ISRP recommendations on related projects and programmatic issues.

Project Presentations and Site Visits

Consider whether you would like to participate in a project presentation or site visit as part of this review process. Council staff will contact project proponents over the next month to develop a schedule for Council/ISRP presentations and potential site visits between August 24 and September 23, 2010. Presentations will be sufficient for most projects. Contact Lynn Palensky at lpalensky@nwcouncil.org with any questions or scheduling requests.

Workshops

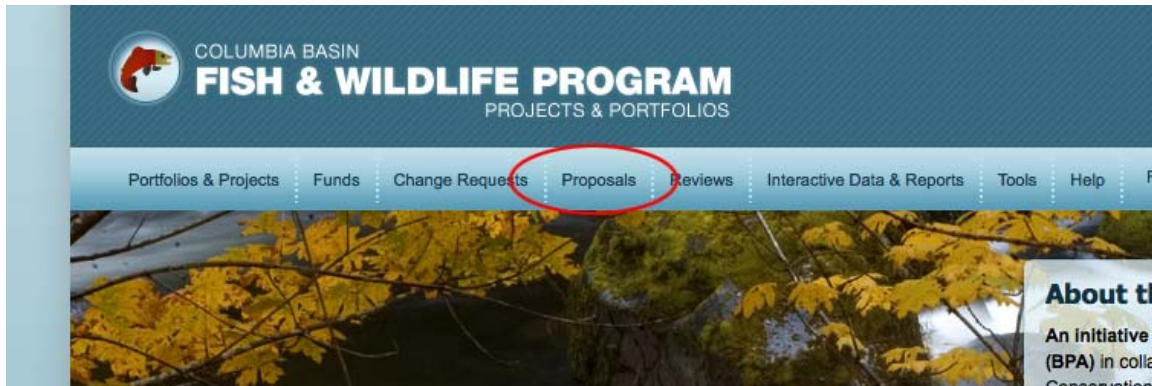
The Council and Bonneville are holding a series of workshops in early June to assist project proponents in understanding how to complete the proposal form. The workshops also will cover details about the review process. Any project proponent is welcome to attend any of the workshops.

<u>June 4th - Boise, ID</u> AmeriTel Inn at Boise Spectrum 7499 West Overland Road Boise, ID 83709 208-323-2500 Robbie Creek Meeting Room 8:30 a.m. to 11:30	<u>June 4th - Lewiston, ID</u> Idaho Dept of Fish and Wildlife 3316 16 th Avenue Lewiston, ID 83501 208-779-5010 1:30 p.m. to 4:30 p.m.
<u>June 7th - Portland, OR</u> Northwest Power & Conservation Council 851 SW Sixth Avenue, Suite 1100 Portland, OR 97204 503-222-5161 Large Conference Room 8:30 am - 11:30 pm	<u>June 10th - Ellensburg, WA</u> Hal Holmes Center 209 N. Ruby Street Ellensburg, WA 98926 509-962- 7240 Teaway Meeting Room 9:00 a.m. to noon
<u>June 14th - Pendleton, OR</u> Oxford Suites Pendleton 2400 S.W. Court Place Pendleton, OR 97801 541-276-6000 9:00 am - Noon	Agenda: <ul style="list-style-type: none">• Welcome & Introductions (5 min)• Overview of schedule and process (15 min)• Overview of Strategic and Programmatic level Guidance (MERR, BiOp RM&E Recommendations Report, Skamania workshop strategy); Additional BiOp Recommendations and Guidelines (30 min)• Overview of cbfish.org (1 min)• Overview of proposal form (20 min) User testing on proposal form (Remaining time)

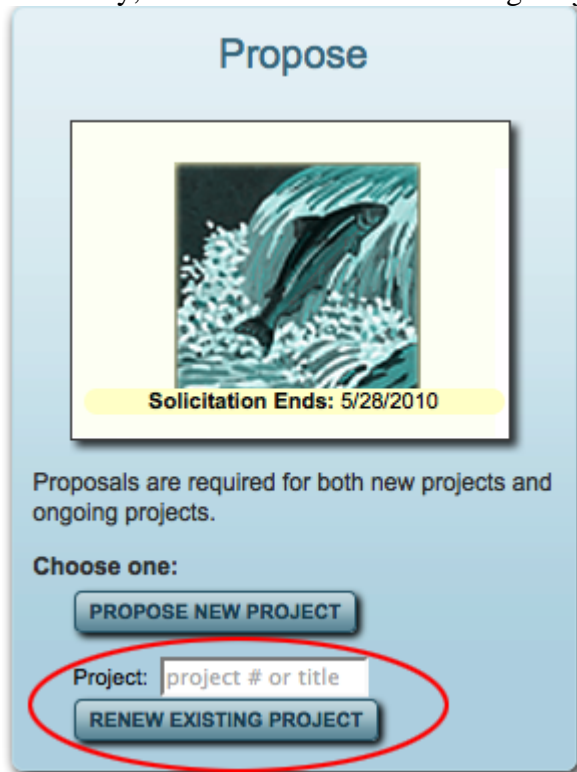
III. Getting Started

Follow these steps to begin working on your proposal:

1. Go to www.cbfish.org.
2. Log in (upper right corner) using your Pisces username and password. If you don't have a username and password, click on the "Request Support" link (upper right corner) to request one.
3. Click on "Proposals" from the top navigation bar.



4. Go to the "Propose" section of the page (on the right).
5. Find your project by entering all or part of the project number or title in the project search box.
6. Finally, click on the "Renew Existing Project" button and your proposal form will load.



Important Guidance Documents (links)

Useful reference documents for proposal development are listed below.

1. Council's website for general information: <http://www.nwcouncil.org/fw>
2. ISRP and ISAB Reports: <http://www.nwcouncil.org/fw/science.htm>
3. High level indicators: <http://www.nwcouncil.org/fw/program/hli>
4. Draft Monitoring, Evaluation, Research and Reporting (MERR): <http://www.nwcouncil.org/library/2010/2010-04.htm>
5. Council's 2009 Fish and Wildlife Program: <http://www.nwcouncil.org/library/2009/2009-09>

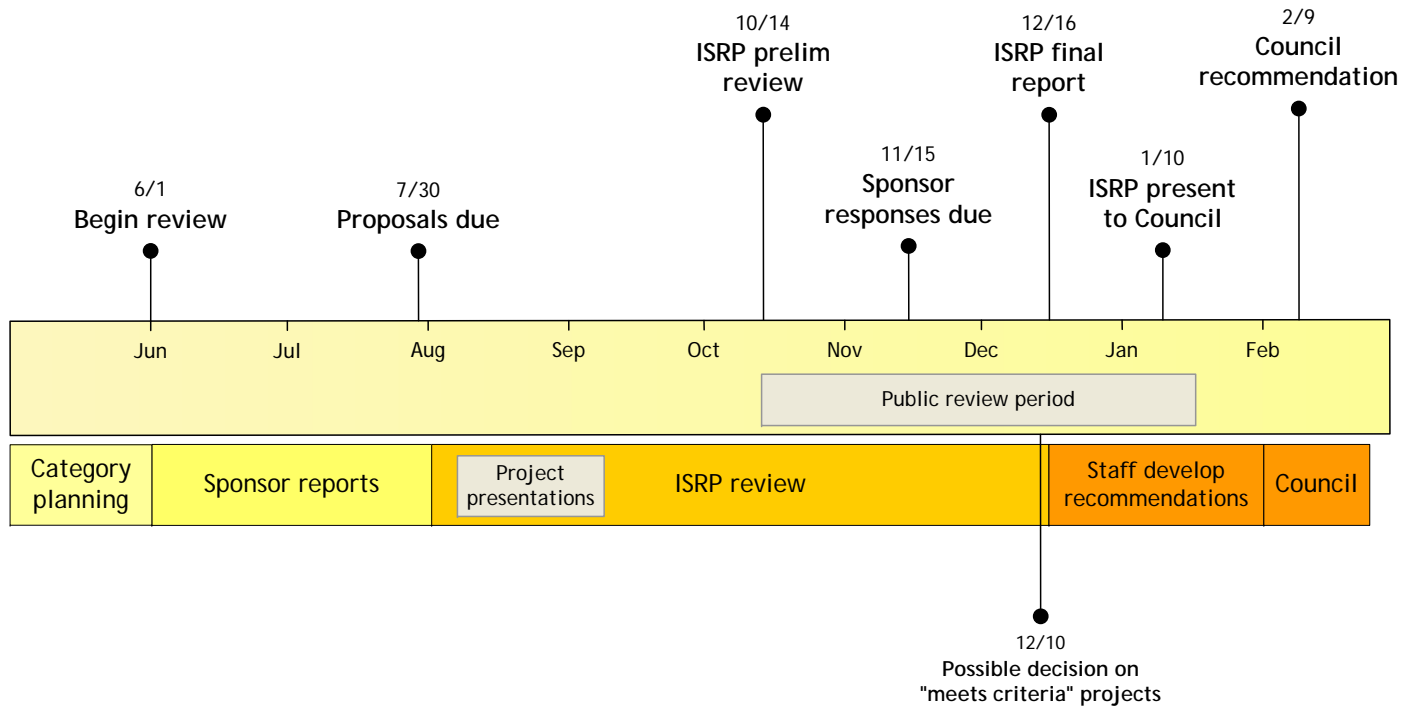
6. Subbasin plans: <http://www.nwcouncil.org/fw/subbasinplanning>
7. Recommendations for Implementing Research, Monitoring and Evaluation for the 2008 NOAA Fisheries FCRPS BiOp (AA/NOAA/NPCC RM&E Workgroups, May 2010). This document provides recommendations on RM&E that are needed to meet FCRPS BiOp RM&E Strategies and RPAs.
<http://www.salmonrecovery.gov/ResearchReportsPublications.aspx>
8. NOAA Fisheries Draft “Guidance for Monitoring Recovery of Salmon and Steelhead: Listed Under the Federal Endangered Species Act (Idaho, Oregon, and Washington)”. Bruce Crawford and Scott Rumsey 2009. <http://www.nwr.noaa.gov/Salmon-Recovery-Planning/upload/Draft-RME-Guidance.pdf>
9. Anadromous Salmonid Monitoring Strategy from the Columbia Basin Coordinated Anadromous Monitoring Workshop (ASMS) <http://www.cbfwa.org/ams/FinalDocs.cfm>

Contact Us

Lynn Palensky, Council	503.222.5161 lpalensky@nwcouncil.org	General process and review
Ben Zelinsky, Bonnevile	503.230.4737 bdzelinsky@bpa.gov	Taurus and proposal form
Erik Merrill, Council	503.222.5161 emerrill@nwcouncil.org	ISRP review and proposal form (narrative questions)
Russell Scranton, Bonnevile	503.230.4412 rwscranton@bpa.gov	Proposal form RM&E Metrics and Methods
Jim Geiselman, Bonnevile	503.230.5732 jrgeiselman@bpa.gov	BiOp RM&E Strategies/RPAs, Habitat Action Effectiveness and Data Management Guidelines
Jeff Gislason, Bonnevile	503-230-3594 jcgislason@bpa.gov	Hatchery RM&E Guidelines
Matt Deniston, Taurus	503.780.5079 matt@sitkatech.com	Taurus and <i>cbfish.org</i> technical

RM&E Plus and Artificial Production Category Review Schedule

May 6, 2010



Updated 3/8/2010

IV. Bonneville's Additional Guidance Related to the FCRPS Biological Opinion RM&E

The Council, Bonneville, Corps of Engineers, Bureau of Reclamation and National Atmospheric and Oceanic Administration have been working together to review FCRPS BiOp RM&E needs and make recommendations for ongoing and new work that is BiOp critical.⁴ This report includes BiOp priority actions that were identified in a collaboration process last year with regional fish management agencies (i.e. Skamania workshop) to develop regional monitoring strategies for anadromous fish population monitoring and tributary habitat and hatchery action effectiveness monitoring (ASMS)⁵. The categorical review will serve as an opportunity to review, refine, and implement ongoing, new or expanded RM&E work that was identified to support the FCRPS BiOp requirements identified within the RM&E Recommendations Report and the Columbia Basin Anadromous Fish Monitoring Strategy (ASMS).

Updated and Expanded Project Implementation Metrics and BiOp RPA Linkages

The review process provides an opportunity to ensure Bonneville is effectively and efficiently directing and implementing RM&E dedicated funding to meet multiple needs. In order to meet these programmatic planning and assessment requirements, a more standardized and expanded set of project implementation metrics data is being requested for all proposed RM&E work undergoing this categorical review. Project implementation metrics include documentation of the target populations, the type of work, the data being collected and the standard methods being applied in the collection of the data.

RM&E project implementation metrics are needed for several phases of the categorical review as well as for tracking and management of projects during the contracting and implementation phases. These implementation metrics are therefore requested by the Taurus project proposal forms and also will be incorporated into Pisces contracts. Bonneville intends to develop data transfer procedures to be able to automatically transfer relevant RM&E project metrics information from the Taurus forms to the Pisces project tracking system.

To ease the burden on proponents in completion of the proposal forms associated with these expanded implementation metrics, Bonneville is offering additional technical support to work with proponents to input monitoring design information into the proposal form. Bonneville is also working to develop metadata generation tools that will use proposal information to help proponents document metadata for datasets they generate later within the implementation and reporting requirements of contracts. This tool will enable proponents to pull required information from the proposal form and Pisces system.

Many existing project deliverables are written in terms of past BiOp needs and Reasonable and Prudent Alternatives (RPAs), and may need to be updated to incorporate more recent assessments and expectations of BiOp RPA linkages to projects. The new proposal form is designed to help proponents write deliverables in terms of more recent BiOp RPA needs. Within

⁴ Recommendations for Implementing RM&E for the 2008 NOAA Fisheries FCRPS BiOp based on AA/NOAA/NPCC RM&E Workgroup Assessments of RPA Actions – May 2010
<http://www.salmonrecovery.gov/ResearchReportsPublications.aspx>

⁵ Columbia Basin Anadromous Fish Monitoring Strategy <http://www.cbfwa.org/ams/FinalDocs.cfm>

the proposal form, proponents will need to validate RPA associations that have been assigned to their projects and write clear deliverables to address any updated BiOp commitments or linkages. If a project's RPA associations are modified by the proponent, the proposed work will be reviewed to validate that it aligns with the intent of the RPA, RM&E Recommendation Report and the ASMS.

For questions regarding project implementation metrics please contact Russell Scranton at Bonneville at 503-230-4412 or rwsranton@bpa.gov.

Additional Guidance and References for Tributary Habitat Monitoring

Habitat action effectiveness monitoring is a critical component of performance tracking and adaptive management needs of the Program and the FCRPS BiOp. The categorical review is intended to help improve the quality and coverage of action effectiveness monitoring across different categories of habitat actions implemented to support these needs. General programmatic level guidance and other information relative to habitat action effectiveness are provided below for consideration while developing proposals.

The current habitat action effectiveness monitoring and assessment strategy being implemented under the Program and FCRPS BiOp requires a combination of project implementation monitoring, a balanced suite of project-level and watershed-scale effectiveness monitoring, and habitat/fish status and trend monitoring for at least one population per major population group. This information is intended to be combined across the Program and with results from other regional effectiveness monitoring programs⁶ to support the development and application of various habitat and fish population relationships and models that will be used to make assessments and inferences about the effectiveness of various actions. For this strategy to succeed, these various components of action effectiveness need to be coordinated across the region with compatible and well documented evaluation designs, field assessment methods, measurements, metrics and derived indicators balanced across different categories of action types (i.e., riparian, instream, fish passage, large woody debris, etc.). The AA/NOAA/NPCC Tributary Habitat RM&E Workgroup and the PNAMP Action Effectiveness Workgroup have been working to advance this strategy and coordinate a network of action effectiveness monitoring at a regional level. Recent guidelines and recommendations from these groups continues to develop and advance through ongoing regional collaboration processes that will be used to further shape monitoring guidelines, direction and the needed balance of habitat action effectiveness work (see www.pnamp.org/pem). Project proponents therefore should consider the following information in the development of proposed work:

- For habitat status and trend monitoring at the watershed or population scale see – Draft Tributary Habitat Monitoring at the Watershed or Population Scale: Preliminary Recommendations for Standardized Fish Habitat Monitoring in the Columbia River Basin⁷ <http://www.salmonrecovery.gov/ResearchReportsPublications.aspx>

⁶ i.e., Washington Salmon Recovery Board, Oregon Watershed Enhancement Board, U. S. Forest Service Pacific Interior Biological Opinion, etc.

⁷ A Workshop on these preliminary recommendations will be held in June, 2010 for BiOp projects performing watershed-level tributary habitat monitoring identified in Table 3 of the RM&E Recommendations Report.

- For effectiveness monitoring at the project or reach scale see - Reach-Scale Effectiveness Monitoring Protocols (revised 2008), <http://www.rco.wa.gov/monitoring/protocols.shtml>
- Evaluation of Effectiveness Monitoring Projects Draft v3.0 – March 2009. <http://www.pnamp.org/node/1770>
- Proponents that propose using a General Tessellated Random Sample (GRTS) design should consider guidance provided by the paper “Integrating Aquatic Ecosystem and Fish Status and Trend Monitoring in the Lower Columbia River: Using the Master Sample Concept” Pacific Northwest Aquatic Monitoring Partnership Integrated Status and Trend Monitoring Workgroup, August 12, 2009 found at <http://www.pnamp.org/node/2666>. The regional Master Sample developed and maintained by EPA and PNAMP may be found at <http://pnamp.science.oregonstate.edu/>.
- Draft Effectiveness Monitoring Inventory Analysis – Preliminary Results, Tetra Tech EC, Inc. May 14th, 2010 <http://www.pnamp.org/node/2961>
- Monitoring Stream and Watershed Restoration. Philip Roni, Ed Quimby, American Fisheries Society. 2005

Bonneville has funded the development of web based tools (see www.onefishtwofish.net.) for assessing the effects of sampling rate, marking rate, and population size on the statistical precision of hatchery and natural escapement estimates, and to facilitate the design of Before-After Control-Impact (BACI) type experiments. In addition, Bonneville will be providing technical and statistical support through technical services contracts to improve project designs or methodologies and the quality and value of data collected. This support is available upon request by the proponent when developing proposals (contact Jim Geiselman at Bonneville to request support at 503-230-5732 or jrgeiselman@bpa.gov).

Additional Guidance and References for Hatchery RM&E

Hatchery monitoring is a critical component of Program and FCRPS BiOp performance tracking and adaptive management needs. The categorical review is intended to help improve the quality and coverage of hatchery monitoring across the different artificial propagation programs.

All stakeholders would benefit if the various components of the monitoring and evaluation programs were coordinated across the region with compatible and well documented metrics, methods, and designs and balanced across different artificial propagation strategies. The Action Agencies will be working with NOAA to convene a technical workgroup with fishery managers to discuss potential studies, management tools, and standard approaches. Guidelines and recommendations through this process will assist the Action Agencies and NOAA when implementing hatchery monitoring through the FCRPS BiOp. To help advance this monitoring and future BiOp assessment needs, the following programmatic-level guidance, recommendations, and other information important to hatchery monitoring is being provided for reference and consideration during development of proposals.

- Recommendations of the *Ad Hoc* Supplementation Monitoring and Evaluation Workgroup, Beasley et al. (2008)⁸

⁸ Beasley C.A, B.A. Berejikian, R.W. Carmichael, D.E. Fast, M.J. Ford, P.F. Galbreath J.A. Hesse, L.L. McDonald, A.R. Murdoch, C.M. Peven, and D.A. Venditti). 2008. Recommendations for Broad Scale Monitoring to Evaluate the Effects of Hatchery Supplementation on the Fitness of Natural Salmon and Steelhead Populations. Final Report

- Recommendations of the Hatchery Supplementation Review Groups (2004 and 2009)⁹
- The precision and accuracy of the estimates of proportion of hatchery-origin escapement Hinrichsen and Sharma 2010.¹⁰

BPA has funded the development of web based tools (see www.onefishtwofish.net.) for assessing the effects of sampling rate, marking rate, and population size on the statistical precision of hatchery and natural escapement estimates, and to facilitate the design of BACI (Before-After Control-Impact) type experiments. In addition, BPA will be providing technical and statistical support for Hatchery monitoring projects through technical services contracts to improve project designs or methodologies and the quality and value of data collected. This support is available upon request by the proponent when developing their proposal (contact Jeff Gislason at BPA for more information - 503-230-3594).

Programmatic Guidelines for Data Management

The 2009 Fish and Wildlife Program and the FCRPS BiOp both stipulate that data and metadata (data documentation) need to be readily available in an agreed-upon electronic format for RM&E and data management projects. This stipulation supports programmatic performance assessments and reporting, and the successful application and integration of RM&E into planning and adaptive management.

To comply with the requirements and objectives of the Program and the BiOp, all RM&E work will need to make available RM&E data and metadata that follow regionally accepted standards and guidelines. Therefore, beginning with Fiscal Year 2011 contracts and proposed work submitted for the categorical review process, all RM&E work should use data and metadata standards and guidelines that have been recommended through the Pacific Northwest Aquatic Monitoring Partnership (PNAMP). If other standards and guidelines are used instead, these need to be described and a rationale provided for why these were used versus PNAMP standards and guidelines. Some of these PNAMP guidelines and recommendations are continuing to develop and advance through ongoing regional collaboration processes shaping programmatic level data management strategy. Further guidance will be forthcoming and the categorical review of data management projects is expected to be initiated within the next year. In the interim, the

of the *Ad Hoc* Supplementation Monitoring and Evaluation Workgroup (AHSWG). 82 pages.
<http://www.cbfwa.org/csmep/web/documents/general/Documents/FINAL%20REPORT%20AHSWG.pdf>

⁹ Hatchery Scientific Review Group (HSRG)–Lars Moberg (chair), John Barr, Lee Blankenship, Don Campton, Trevor Evelyn, Tom Flagg, Conrad Mahnken, Robert Piper, Paul Seidel, Lisa Seeb and Bill Smoker. 2004. *Hatchery Reform: Principles and Recommendations of the HSRG*. Long Live the Kings, 1305 Fourth Avenue, Suite 810, Seattle, WA 98101 (available from www.hatcheryreform.org).

Hatchery Scientific Review Group (HSRG)– Peter Paquet (chair), A. Appleby, P. Seidel, D. Campton, M. Delarm, D. Fast, T. Flagg, J. Gislason, P. Kline, G. Nandor, J. Barr (vice chair), H. Lee Blankenship (vice chair), T. Evelyn, L. Moberg (chair, 2000-08), S. Smith. 2009. *Columbia River hatchery reform system-wide report*.
http://www.hatcheryreform.us/hrp/welcome_show.action.

¹⁰ Hinrichsen, R.A., and R. Sharma. 2010. The precision and accuracy of estimates of the proportion of hatchery-origin escapement. Draft Report, May 27, 2010, 52 pages. <http://www.pnamp.org/node/2904>

following documents posted on the PNAMP web site (www.pnamp.org) should be used to guide the management of data and metadata associated with RM&E projects:

- “Considerations for Regional Data Collection, Sharing and Exchange” (Schmidt, B., ed., 2009)
- “Regional Guidance on Metadata for Environmental Data” (Rentmeester, S., ed., 2010)
- PNAMP’s “Methods and Metrics Catalogue” (<http://www.monitoringmethods.org/>)
- “Best Practices for Reporting Location and Time Related Data” (NED, 2007)
- “Best Practices for Data Dictionary Definitions and Usage” (NED, 2006)
- “Check List for Organizing Field Collection and Management of Data” (NED, 2006)

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