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MEMORANDUM

TO: Council

FROM: Steve Waste, Manager, Program Analysis and Evaluation

SUBJECT: Draft Monitoring Coordination Plan of the Pacific Northwest Aquatic Monitoring Partnership

This is an informational briefing only; no Council action is required at this time.

Background

The Pacific Northwest Aquatic Monitoring Partnership (Partnership or PNAMP) has submitted a draft plan to the Council, "Recommendations for Coordinating State, Federal, and Tribal Watershed and Salmon Monitoring Programs in the Pacific Northwest." This plan was transmitted to the Council on December 30, 2003 in response to the directive from the Four Governors to produce such a plan by year end (see Attachment 1). This memo describes the two issues upon which the Partnership seeks guidance from the Council, level of coordination and support for funding.

The purpose of the Partnership is to coordinate important scientific information at the appropriate scales needed to inform public policy and resource management decisions. The Partnership is intended to provide an effective coordination mechanism for refinement of aquatic monitoring and support programs, and for coordinated analysis and reporting of results. Members of the Partnership have to date included state, federal, and tribal personnel with a common interest in coordinating various aspects of watershed condition monitoring, fish population monitoring, effectiveness monitoring, and management of resulting data. The Partnership strives to recognize the unique responsibilities of its members, working together to facilitate advancement and progress on common objectives.

Why Important - Government agencies and other organizations use a variety of different monitoring efforts. Typically, these are independent efforts that address questions and management problems that are relatively unique to each agency. Such monitoring efforts have typically included little or no coordination with other agencies. However, new questions are now being asked that are best answered at large-scale landscape levels. This will necessitate coordination across traditional lines and creates a new set of challenges. To succeed, the

Partnership will require policy support and direction by member organizations, commitments of technical resources and staff time and ultimately, funding for the coordination itself.

A key focus for the Partnership has been to identify a shared perspective of monitoring tools and methods that, when used in common, allow current and new information to be viewed and used by decision-makers at various (different) scales across the landscape. This often means being able to “roll-up” local information to larger scales, or may involve relating information from larger scales across different jurisdictional boundaries. It involves both “what” is monitored, and “how” the information is collected in the field and made available through information systems.

Analysis

Comments on the Draft Monitoring Coordination Plan

It is important to note that the initial work of the Partnership was aimed at watershed condition monitoring. The Partnership subsequently broadened its scope of interest to include effectiveness monitoring, fish population monitoring, and data management associated with the broad interests of the Partnership. Although the Four Governors requested a plan for “fish monitoring,” the scope of the Partnership’s interest and the relationships between watershed condition monitoring and project effectiveness monitoring were closely linked to fish population monitoring. In September 2003, the Partnership convened three new Technical Groups to address project effectiveness monitoring, fish monitoring, and data management. The Partnership agreed that the region needed a monitoring coordination plan, and that it should facilitate integration of these types of monitoring into a regional monitoring program addressing fish and habitat condition.

To date the Partnership has not explicitly discussed nor included wildlife as a component shared by all members of the Partnership. This is because wildlife is an example of an issue of interest to one or more members, but not crosscutting all members. The Partnership has tried to first identify those needs that indeed cut across all, or most, members. The members recognize there are limits to how well those initial crosscutting issues fit needs of each organization, and wildlife is not yet a common element.

For these reasons, the level of detail in the modules is uneven, as a function of longevity and focus of each work group. Therefore, the modules should not be expected to be equally mature, but viewed as having room to grow. Brief comments are provided below on each of the main elements of the plan.

Governance Planning Module - The Partnership has developed this plan as a way to facilitate identification by executives of the resource needs of the Partnership and to facilitate discussion between, and decision-making by, the many sponsors of the Partnership. At this juncture, obtaining enhanced coordination through the Partnership will require the following: an organizational structure that provides policy and technical support and direction by member organizations, commitments of technical resources and staff time, and funding for the desired level of coordination. Therefore, this module proposes a governance structure for the Partnership with the following principle components: an Executive Network, a Steering Committee, Technical Groups, and a Coordinator. (See p.14 of the plan for detailed explanation of these elements.)

Watershed Condition Monitoring Planning Module - Today, three basic site selection-sampling designs for status and trend monitoring are in use and share common features, but are designed to meet different objectives. A fourth, the Action Agencies/NOAA Fisheries RM&E Plan for tributary status monitoring in the 2000 FCRPS Biological Opinion, is proposed and will be implemented through three pilot subbasins in 2004. The Partnership's goal is to clarify how these efforts might be coordinated so they can appropriately use each other's data to make inferences at a variety of landscape scales.

Effectiveness Monitoring Planning Module - There is general agreement that a regional network of Intensively Monitored Watersheds (IMW) is needed to evaluate restoration projects, programs, and policies at the landscape scale. The IMWs are designed to assess the relative contribution of restoration actions within the context of other factors or ecological stressors that may degrade systems. Ecological processes occurring upstream or upslope from the project, as well as out-of-watershed effects, increasingly influence higher-level outcomes such as the viability of salmonid populations. Currently, there are several elements of the effectiveness monitoring initiative ongoing:

1. Field Experimentation - Funding was provided by the Bonneville Power Administration to implement pilot studies in the Wenatchee, John Day, and Salmon River watersheds.
2. Inventory - The Columbia Basin Fish and Wildlife Authority (CBFWA) was also provided funding through Bonneville to conduct a collaborative system-wide monitoring and evaluation assessment to inventory existing status/trend monitoring of salmon stocks, assess the strength and weaknesses of existing monitoring, and design improved monitoring methods.
3. Retrospective - A project with ESSA technologies is currently assessing the ability of existing data to answer questions on the effectiveness of habitat actions and recommending methods for improving future assessments.
4. Other Partnership members such as the states of Oregon and Washington, and the Aquatic and Riparian Effectiveness Monitoring Program of the US Forest Service have other effectiveness monitoring efforts ongoing outside the Columbia River Basin, evaluating effectiveness of specific categories of actions and habitat projects.

Fish Monitoring Planning Module – To date much of this module draws from efforts in the Columbia Basin, including work in pilot subbasins. For example, smolt monitoring and transport has been a major concern of the states, tribes, and federal action agencies involved with Columbia Basin hydroelectric facilities. Monitoring the abundance of juvenile migrants is of prime importance in determining overall freshwater production and productivity and in determining the strength of returning adult spawning migrations and overall health of the population or ESU.

While progress is being made, there are still large collaborative gaps. There is a great need to standardize indirect estimation procedures such as mark recapture programs, and analysis of coded wire tag data. Despite major strides in the area of fish genetics there is still little coordination with respect to methods and analytical standards.

The Fish and Wildlife Program contract to identify appropriate protocols for counting salmonids, resident fish, and lampreys in the Pacific Northwest will aid the Partnership. That project will deliver a robust set of protocols for the counting fish and lampreys. The goal of the project is to assemble, analyze and recommend protocols that will establish regional compatibility between data collection efforts and associated data sets. The data collected through the recommended protocols recommended will aid in providing a consistent foundation for plans to restore, protect, and monitor the health and biological capacity of aquatic and terrestrial habitats in the Pacific Northwest. The CBFWA is currently assessing all of the ongoing fish related monitoring in the Columbia Basin on behalf of the Council.

Data Management Planning Module - Data management coordination is a relatively new aspect of the Partnership and a workgroup has recently been formed. Although data management is not a type of monitoring, the intent of this module is to address the crucial role it will play in supporting a regional monitoring program. Although a relatively new workgroup, a separate data management initiative is already underway in the region with strong support from the Council.

The Partnership's data management coordination effort is currently at the first step involving the assessment of 'clients' needs and requirements. The clients for the effort are the three workgroups: Watershed Condition Monitoring, Fish Population Monitoring, and Effectiveness Monitoring. The workgroups will identify their specific data management needs. In addition the Partnership as a whole is likely to have needs that go beyond individual work group needs. The collective needs will also have to be identified. When the data management coordination needs of the Partnership are identified and documented they will need to be compared to other ongoing data management efforts.

For example, the Council and NOAA Fisheries (CBCIS/Regional) Data Network Project has identified steps for actions relating to regional data management standards and protocols and improved data availability and sharing, including aquatic monitoring. This project is currently working on an administrative arrangement; a cost-share agreement; and, a memorandum of understanding for potential partners in regional information system development. The effort is currently being expanded to cover a wider region embracing the Columbia Basin plus the regional extent of Pacific Coast salmon recovery efforts.

Discussion Issues From the Draft Plan

Level of Coordination - Increased coordination is needed to achieve the vision of the Partnership. Executive policy guidance is needed to guide advancement toward the desired level of improved coordination. At present the Partnership is operating without such policy guidance. The Partnership has reviewed existing monitoring structures to identify those that may correspond to desired coordination options and concluded that a coordination structure does not now exist that would fulfill the "vision" of the partnership. Therefore, in the plan, the Partnership proposes four options to achieve different levels of desired coordination. Resources and estimated costs will vary depending on the level of coordination and the pace of coordination (see Attachment 2). The Partnership seeks the Council's recommendation regarding the appropriate level of coordination.

Partnership Funding - From its inception, the Aquatic and Riparian Effectiveness Monitoring Program (AREMP) team leader has supported the work of the Partnership. The AREMP team leader has facilitated technical efforts and linkages to policy forums, provided meeting space, and edited group work products. AREMP can no longer provide these services in 2004 and so the Partnership is seeking in-kind contributions of staff for the coordination efforts as well as funds for administrative support from the members of the Partnership. The budget currently proposed is intended to move the Partnership from the status of an ad hoc group currently operating without: a coordinator or any other designated point of contact; an executive level sponsor; a letterhead; anyone empowered to represent the Partnership documents on behalf of the group. The Partnership therefore seeks funding for a minimal level of administrative support in order to continue operating and/or to begin implementation of the coordination option designated by the executive groups (see Attachment 3).

During the transition period between the beginning of 2004 and the completion of the briefing schedule, the US Geological Survey will detail a coordinator to the Partnership on an interim basis. One member of the Partnership, the Washington Salmon Recovery Funding Board, has already sent a letter of support to the Chair of the Regional Interagency Executive Committee (see Attachment 4).

As the work of the Partnership matures, it is anticipated that the work groups will generate proposals for on the ground projects to contribute toward implementation of this plan. Those proposals will be submitted to a variety of funding sources, including the Fish and Wildlife Program. Although implementing these recommendations will incur costs, significant savings can be achieved through increased effectiveness at the project scale to improved efficiencies at the program scale.

Next Steps

Briefing the Regional Executives - The Partnership is developing a schedule for briefing other groups of state and federal executives, the tribes, and relevant planning groups. A total of thirteen groups have been identified, and specific or approximate dates have been set for four of the briefings.

Plan Refinement - The Partnership intends to continue working on the draft plan through the period of the executive briefings in order to address comments and ideas received in response to the briefings.

On-going Coordination of Plan Development - It is important to remember that the geographic coverage of the Partnership is much larger than the Columbia River Basin, encompassing the Pacific Northwest from Canada to Northern California. While the diverse interests of many members of the Partnership intersect in the Columbia River Basin, such as Oregon and Washington statewide monitoring efforts and AREMP, there are also members with responsibilities outside of the Columbia River Basin, such as Puget Sound and Coastal Indian tribes in Washington and coastal Oregon.

The Partnership already includes a broad spectrum of agencies and tribes that have interests and responsibilities for monitoring of watershed health and species recovery, yet there may be other interests that wish to participate that have not yet done so. In addition, many of the members of

the Partnership participate in other regional monitoring efforts. Notably, CBFWA has initiated the CBFWA System-Wide Monitoring and Evaluation Project that include participants whose responsibilities overlap with the Partnership but also includes an even broader range of fish and wildlife management agencies. Through the general coordination elements of this project, CBFWA has provided modest support to the development of this draft plan.

Implications for Subbasin Planning - The Partnership provides a forum for addressing issues at the interface of the fish and wildlife program; the federal research, monitoring, and evaluation plan; and, subbasin planning. To date the Partnership has been working to clarify and strengthen the relationships between the respective programs of its members, with a strong emphasis on linking state and federal monitoring efforts. The products under development or proposed by the Partnership are of high salience to subbasin planning but are at different stages of completion. The products from the Partnership will help local planners at the watershed and regional scales, such as regional salmon recovery groups in Washington, and subbasin/watershed planners across the region. The Partnership may be able to offer guidance for local monitoring that fits within and relates well to coarser scale monitoring, and help develop a local role in coordination with state/partner effectiveness monitoring programs. In the near term, it is important for subbasin planners to work with the state monitoring programs need to determine how to best meet their monitoring needs. The Partnership plans to give a full briefing on their draft plan to the Regional Coordination Group. It will also meet with the state level groups, after receiving a briefing from Council staff on subbasin planning.

Attachments

1. Revised Executive Summary (includes Proposed Action Plan)
2. Characteristics and Implications of Different Levels of Monitoring Coordination
3. Structure Options to Achieve Different Levels of Desired Coordination
4. Letter from Washington Salmon Recovery Funding Board

**Pacific Northwest Aquatic Monitoring Partnership
Coordinating State, Federal, and Tribal
Watershed and Salmon Monitoring Programs in the Pacific Northwest**

Executive Summary

The purpose of the Pacific Northwest Aquatic Monitoring Partnership (PNAMP or Partnership) is to coordinate monitoring of important scientific information at the appropriate scales needed to inform public policy and resource management decisions.

Members of the Partnership have to date included state, federal, and tribal personnel with a common interest in coordinating various aspects of watershed condition monitoring, fish population monitoring, effectiveness monitoring, and management of resulting data.

Improved communication, shared resources and data, and compatible monitoring efforts provide increased scientific credibility and greater accountability to stakeholders.

Guiding principles of the Partnership relate to:

- Resource policy and management
- Efficiency and effectiveness
- Scientific basis
- Shared information

Much work has been accomplished over the last two years. This document describes those accomplishments and recommends the highest priority next steps to develop a regional plan to coordinate monitoring.

To succeed, the Partnership will require policy support and direction by member organizations, commitments of technical resources and staff time and ultimately, funding for the coordination itself.

In addition to a monitoring coordination structure, the Partnership has identified four key elements of monitoring, and within each has identified the highest priorities and related costs to improve coordination.

Recommendations and costs associated with a monitoring coordination structure, watershed condition monitoring, effectiveness monitoring, fish population monitoring, and data management are summarized in the following table.

Proposed Action Plan

	Key Element/Recommendation	Timeline	Cost *
Coordination Structure			
1.	Implement proposed PNAMP coordination structure to include: an Executive Network, a Steering Committee, Technical Groups, and a Coordinator jointly funded by PNAMP participants.	March 2004	\$155K
2.	Agencies contribute in kind participation.	Continuous	(\$246K)
Watershed Condition – HABITAT			\$15K/yr
1.	Develop a spatially balanced survey design and integrated sampling strategy that allows the aggregation of data at multiple landscape levels over the PNAMP area to which participants will tier their watershed condition surveys.	2004-06	
2.	Identify a core set of attributes and protocols that state, federal, and tribal monitoring programs will use for assessing status and trends in watershed condition.	2004-06	
3.	Identify and implement a process for developing/refining common GIS layers.	2004-06	
Effectiveness Monitoring – HABITAT & FISH			\$15K/yr
1.	Develop a short list of high level indicators of salmon recovery and watershed health at a 3 rd field level that can be aggregated to state and regional levels.	June 2004	
2.	Develop a regionally acceptable standard for obtaining statistically valid samples of habitat restoration projects to say with certainty that the projects sampled represent the effectiveness of the project category as a whole.	2005	
3.	Develop a list of habitat restoration project categories that if designed and constructed using documented BMP criteria are considered effective.		
4.	Identify attributes and protocols that state, federal, and tribal monitoring programs will use for assessing project effectiveness.	September 2004	
5.	Strategically place intensively monitored watersheds throughout the Pacific Northwest to monitor and evaluate cause and affect relationships between habitat changes and fish abundance.	2005	
Fish Population Monitoring – ABUNDANCE & HARVEST			\$15K/yr
1.	Identify field sampling attributes and protocols that state, federal, and tribal monitoring programs will use for assessing status and trends in fish abundance, other biological indicators, and harvest.	August 2004	
Data Coordination			\$15K/yr
1.	Complete detailed assessment of the data management coordination needs of PNAMP work groups and the PNAMP group as a whole	Begin February 2004	\$30-55K
2.	Complete the PNAMP needs assessment including a gap analysis to determine what data management needs can be met by existing programs and what needs can be met with PNAMP coordination	Begin May 2004	Same as above
3.	Develop a PNAMP Data Management Coordination Plan including deliverables, timetable and budget.	Begin June 2004	tbd

* Initial estimates.

Attachment 2 Characteristics and Implications of Different Levels of Monitoring Coordination (Editor: Kelly Moore, OWEB).

Coordination Level	Watershed Condition Monitoring	Effectiveness Monitoring
Minimal – Status Quo	<p>Independent watershed assessment and monitoring programs.</p> <p>No effort to integrate probabilistic sampling designs that allow making inferences at the landscape scale.</p> <p>Some common protocols and indicators.</p> <p>No shared analysis or application to landscape scale management or policy.</p> <p>Data sharing restricted to sending yearly reports to other agencies.</p>	<p>Evaluation of individual projects and management actions.</p> <p>Independent, potentially redundant, efforts to document program or policy effectiveness.</p> <p>Independent small-watershed studies.</p> <p>Inability to evaluate cumulative effects of restoration projects at the landscape scale.</p>
Basic – Information Sharing, Improved Compatibility, Less Redundancy	<p>Continue current “informal” coordination efforts: monitoring program representation from NW Forest Plan; Federal Caucus, States, CRITFIC, BPA, others.</p> <p>Activities include:</p> <ul style="list-style-type: none"> • Identify active and developing monitoring programs in PNW-CA • Describe common monitoring attributes and associated protocols. • Work to improve coordination and sharing of data • Improve communication with coastal, Puget Sound, and Columbia Basin tribal monitoring programs • Identify common attributes of WA, OR, CA, and FHPS Bi-Op monitoring strategies. 	<p>Comprehensive Implementation Monitoring for Restoration Projects, Management Actions and Recovery Programs.</p> <ul style="list-style-type: none"> • Independent tracking of restoration actions conducted by various entities. But, make commitment to create compatible data structures. • Establish timeframe and protocols for sharing information.
Medium – Agreement to coordinate complimentary implementation of monitoring activities and monitoring program development	<p>Expand Basic level of coordination to all watershed condition monitoring within the Pacific Northwest: state, federal, and tribal organizations. Create ability to share data across all landscapes.</p> <p>Explore potential for interagency and intergovernmental agreements that commit to following:</p> <ul style="list-style-type: none"> • Utilize probabilistic sampling designs adapted to individual program needs • Standardize protocols for core attributes, or develop “cross-walks” that combine data collected using different protocols. • Develop and use common GIS layers, e.g., stream hydrography, roads, watershed boundaries, harvest and fire history, vegetation. • Develop systems for sharing data in a timely manner 	<p>Develop Coordinated-Regional Strategy for Project Effectiveness Monitoring</p> <ul style="list-style-type: none"> • Shared Protocols • Development and Application of Experimental Designs • Evaluation of project classes depending on different program and agency focus.
High –	<p>Expand Medium level of coordination for watershed condition monitoring to incorporate “nested” project effectiveness monitoring and long-term watershed-scale studies.</p> <ul style="list-style-type: none"> • Use project level monitoring to help evaluate watershed condition • Work towards overall monitoring implementation plan that accommodates common information needs 	<p>Watershed Scale Effectiveness Monitoring</p> <p>Interagency and interjurisdictional cooperation to establish a network of “Intensively Monitored Watersheds” that systematically evaluate restoration actions, management programs, and other influences on watershed health and salmon populations.</p>

Coordination Level	Watershed Condition Monitoring	Effectiveness Monitoring
	<ul style="list-style-type: none"> • Establish process for monitoring results to be shared and used at policy levels throughout the region. 	Protocols Reporting etc.

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Attachment 3 Structure Options to Achieve Different Levels of Desired Coordination

Coordination Level (from Table 1)	Features of Structure Option	Comment/New Cost
Minimal – status quo	Status Quo – <ul style="list-style-type: none"> • Executive Network – loosely identified • Informal workgroup only; No recognized policy or technical groups • Coordinator time and member participation are volunteered 	High risk that PNAMP activity would not be sustainable. New Cost: None
Basic – Information sharing, improved compatibility, less redundancy	Informal – emphasis on communication <ul style="list-style-type: none"> • Executive Network – informal but explicitly identified • Coordinator position is funded to facilitate activities of the Partnership • Relies on informal technical workgroups • Loosely organized policy and science staff • Participant staff time is volunteered 	With paid Coordinator, this option improves likelihood that some progress could be made on PNAMP priorities; however, progress is dependent upon the level of participation volunteered by members. New Cost: low; est. \$100k
Medium – Agreement to coordinate complimentary implementation of monitoring activities and monitoring program development	Enhanced informal – beyond communication, emphasis includes more coordination of design and analysis <ul style="list-style-type: none"> • Executive Network – informal but explicitly identified • Chartered Steering Committee provides science-policy interface and linkage to Executive Network • Dedicated Coordinator position that facilitates and staffs Steering Committee • Recognized technical workgroups • Some commitment (compensation, dedicated in-kind) of participants 	Should allow substantial progress on key priorities in the next few years New Cost: medium; est. \$200k
High – Integrated	Semi-formal – multi-layered structure would be accountable for expanded coordination and actual integration of monitoring programs <ul style="list-style-type: none"> • More formal Executive Network and commitments • Chartered Steering Committee provides science-policy interface and linkage to Executive Network; rotating Chair • Dedicated Coordinator position that facilitates 	Most formal option, that if successfully implemented, could provide a high level of coordination. This level of formality is not needed to make substantial progress in the next few years, but could be

	and staffs Steering Committee <ul style="list-style-type: none">• Formal technical workgroups• Compensation for participants	utilized in the future, as warranted. New Cost: \$300k
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Attachment 4 Letter from Washington Salmon Recovery Funding Board (copy included in packet)

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