



# Oregon

Theodore R. Kulongoski, Governor

## Oregon Watershed Enhancement Board

775 Summer Street NE, Suite 360

Salem, OR 97301-1290

(503) 986-0178

FAX (503) 986-0199

[www.oregon.gov/OWEB](http://www.oregon.gov/OWEB)



January 6, 2009

## MEMORANDUM

**TO:** Oregon Watershed Enhancement Board

**FROM:** Greg Sieglitz, Monitoring and Reporting Program Manager  
Renee Davis-Born, Data Analyst and Information Specialist

**SUBJECT: Agenda Item L-1: Oregon Plan Products  
January 21-22, 2009 OWEB Board Meeting**

### I. Introduction

This report updates the Board on the further development regarding three specific Oregon Plan Products discussed at the September Board meeting. The report is for informational purposes only.

### II. Background

Over the years, OWEB has provided support for the implementation of the Oregon Plan for Salmon and Watersheds by funding interagency efforts that help further State goals and objectives. The Board has retained an Oregon Plan Products non-capital spending plan line item in recent biennia to provide for Oregon Plan needs identified by staff in consultation with the Oregon Plan Monitoring Team and Core Team. Staff include Oregon Plan products as a subcomponent of the Partnership Investments program, because they do not fit well into the regular grant program process.

In 2007, the Board delayed funding additional Oregon Plan Products until there was more clarity about the amount of non-capital funding that would be available from the Pacific Coastal Salmon Recovery Fund (PCSRF). At the May and September 2008 Board meetings, staff briefed the Board about several high priority Oregon Plan Products. These products, which are the subject of this report, will inform such activities as project planning and implementation by watershed councils to reporting on agency Key Performance Measures by OWEB and other agencies.

Last summer OWEB was awarded additional PCSRF funds. In September 2008, the Board reserved \$650,000 of those funds for Oregon Plan Products. Due to current budgetary considerations, staff is not at this time proposing the Board fund the Oregon Plan Products described below. However, we do believe these projects warrant a continued discussion and may be appropriate to fund later this biennium if funding is available.

### **III. Oregon Plan Products for Future Consideration**

#### **A. Data Management System for Fish-Passage Barriers and Habitat**

Fish passage barrier removal projects comprise a significant number of the total on-the-ground accomplishments under the Oregon Plan for Salmon and Watersheds. OWEB awarded well over \$28 million in grant funds for 313 fish passage barrier removal projects over the last ten years. Several thousand miles of streams have been re-opened to salmon and other aquatic species in Oregon's waterways as a result of this partnership. To date, however, Oregon does not possess a partial or comprehensive list and map of fish passage barriers to guide priority development for future barrier removal and for evaluation of past barrier removal accomplishments relative to overall needs.

The Oregon Department of Fish and Wildlife (ODFW) is charged in statute with maintaining a fish passage barrier database and prioritization system. ODFW has made significant progress in developing an approach and prioritization framework through a collaborative task force that will result in an Oregon Fish Passage Barrier Inventory Database. In recent months, ODFW secured funding from the Oregon Department of Administrative Services and the U.S. Fish and Wildlife Service to update spatial datasets for fish habitat distribution and fish-passage barriers.

By mid 2009, ODFW anticipates making up-to-date fish habitat distribution data available online for coho salmon, winter and summer steelhead, spring and fall Chinook salmon, and chum salmon. This initial version of the fish passage barrier database is not inclusive of all fish-passage barriers on all state waterways, but it does represent a compilation of the three largest databases in Oregon (ODFW, Oregon Department of Transportation, and the Bureau of Land Management).

Since the September Board meeting, OWEB and ODFW staff met to discuss near-term priorities and future needs related to data management for fish-passage barriers. These priorities include such tasks as incorporating into the ODFW barriers database information from other sources such as OWEB's Oregon Watershed Restoration Inventory (OWRI), Oregon Water Resources Department (OWRD), U.S. Forest Service, and local barrier inventories from watershed councils and soil and water conservation districts. In addition, staff from both agencies have coordinated on a review of five barrier datasets from the Umpqua Basin to assess the consistency of content among the datasets and to evaluate the degree of overlap.

OWEB funding could enable the development of a comprehensive, web-accessible data management system for fish-passage barriers that will greatly benefit OWEB, grantees, tribal government, state agencies, federal entities, and the public. Data in this system would be regularly updated to reflect new inventories of barriers and restoration actions undertaken to address fish-passage problems. This web-based system would allow users to depict fish habitat and barriers on maps, assess the level of severity of different barriers, and to use decision-support tools for prioritizing barrier removal restoration projects at multiple geographic scales throughout the state. OWEB funds would be used for the staff time and costs related to developing, updating, and distributing the data layers that would be generated under this effort.

Staff estimate that \$80,000 in OWEB funding would be needed to support this effort. This item may be presented for consideration of the Board at its March 2009 meeting.

### **B. Stream Flow Measurement with Oregon Water Resources Department**

Another potential Oregon Plan Product involves OWRD stream flow gauges and monitoring equipment. This is integrally linked to the Board's investment in water conservation and irrigation efficiency projects, as well as the subsequent effectiveness monitoring program effort to evaluate those projects. Over the past several years, funding of stream flow monitoring and gauges has occurred in several areas of the state through the regular grant program at OWEB. There has not been a systematic evaluation of where these gauges are funded relative to a state-wide strategy such as that developed by OWRD.

Staff have explored potential partnerships regarding stream measurement with OWRD staff for several years. During the 2007 legislative session, OWRD and OWEB were involved in discussions about the importance of upgrading, installing, and maintaining Oregon's network of stream gauges. These discussions included the idea of a partnership to fund priority stream gauges for flow and water quality monitoring. Staff expect similar discussions to continue this session given that the Governor's Recommended Budget includes \$100,000 in Measure 66 Lottery funding for water measurement purposes.

This issue remains relevant to OWEB programs. When presented with the consideration of this topic at the September meeting, several Board members expressed interest in potential OWEB investment in a partnership with OWRD, particularly as it relates to restoration project evaluation and climate change. In addition, the stream flow measurement issue dovetails well with the recently formed Flow Conservation Work Group formed by OWEB staff. (See Agenda Item G.)

Given that this issue will likely be a topic during the legislative session, staff do not recommend specific proposals for action at this time. Staff will keep the board updated with any new developments on this subject at upcoming board meetings.

### **C. Watersheds Research Monitoring Equipment**

OWEB has invested in several research projects over the years and many include the purchase and operation of monitoring equipment. At times, this equipment is subject to damage, loss, and vandalism. While funding of maintenance is not eligible through the restoration grant rules, no such prohibition exists for research or monitoring grants. Until recently, the Board has not been asked explicitly to fund equipment repair and replacement. In the spring of 2008, staff were contacted by the Oregon Watersheds Research Cooperative (WRC) on the subject of funding equipment replacement and repair for three paired-watershed study areas previously funded by the Board.

The WRC is a public-private consortium comprised of state and federal agencies and private forestry interests. The WRC is implementing watershed scale research projects in three areas (Trask, Hinkle, and Alsea river basins), in part, through OWEB funding. The projects are designed to evaluate contemporary forest harvest and develop an understanding of the effect of those practices on physical and ecological processes on the landscape. OWEB has funded capital expenses through two separate research grants for the WRC in the amount of nearly

\$650,000. The most recent investment of \$400,000 was through a Research Grant awarded in September of 2007.

The WRC approached staff this spring with a request for additional funding to cover research equipment repair and replacement costs, estimated at \$60,000 per year. The WRC requested that OWEB consider partial funding to cover 50 percent of these costs, or \$30,000 per year. Following the Board discussion in September 2008, the WRC provided additional supplemental information, which is contained in Attachment A. The WRC also revised its proposal to request \$13,835 per year from OWEB.

Staff believe the revised request represents a more realistic need for the research project equipment maintenance, repair, and replacement. There is not a prohibition on funding the maintenance of monitoring and research equipment as exists in the administrative rules pertaining to restoration grants, and research grants are often dependent upon functioning equipment in order to provide useful information. For these reasons, staff anticipate returning to the Board in March with a request to fund the maintenance, repair, and replacement of equipment for the project from research capital funds. The current request, however, is for funding through 2017 and staff will continue to work with the WRC to refine this aspect of the request.

#### **IV. Staff Recommendation**

This is an informational item only. No Board action is required at this time.

Attachment

A. Oregon Watersheds Research Cooperative Request

**MAINTENANCE/REPAIR BUDGET  
ALSEA WATERSHED STUDY**

The Watersheds Research Cooperative (<http://watershedsresearch.org/>) is evaluating the effectiveness of various forest management strategies in protecting and restoring small headwater streams and downstream fish bearing streams. OWEB has invested close to \$900,000 in the three watershed studies in two separate grant cycles for capital investments. These studies would not have been possible without these OWEB investments. While long-term studies are needed to address these kinds of effectiveness questions, they also result in annual equipment repair and replacement costs. The purpose of this paper is to provide budget and Oregon Plan context for these watersheds studies and discuss the expected nature of our expected equipment maintenance costs over the life of the studies (through 2017).

Total estimated annual maintenance or replacement costs for three watershed studies: **\$13,835/year**. The actual equipment is itemized in Tables 1, 2 and 3. This estimate does not include batteries that will eventually wear out nor does it include catastrophic damage to any station such as treefall on a weir or gauging house or loss of a flume site during debris flow or storm event. Costs to completely re-establishment a gauging station or flume site would range from \$12,000 - \$23,000 depending on the site.

Table 1. Estimated annual equipment maintenance costs for the Alsea.

<b>Alsea Items</b>	<b>Cost</b>
Annual replacement of tubing for pump samplers (3 sets)	\$250
Annual replacement for DO probe sensor caps (6)	\$510
HACH DO Probes (1 per year due to vandalism or weather damage)	\$2,425
Precipitation gauges (average of 2 lost per year due to vandalism)	\$100
1 TTS station to be vandalized every three years	<u>\$2,000</u>
<b>TOTAL ANNUAL</b>	<b>\$5,285</b>

Table 2. Estimated annual equipment maintenance costs for the Trask.

<b>Trask Items</b>	<b>Costs</b>
Annual TTS Maintenance	\$ 2,685
Annual headwater flume maintenance	\$ 2,385
<b>TOTAL ANNUAL</b>	<b>\$ 5,070</b>

Table 3. Estimated annual equipment maintenance costs for Hinkle.

<b>Hinkle Items</b>	
Annual Micro Met Maintenance	\$ 600
Annual TTS Maintenance	\$ 2,880
<b>TOTAL ANNUAL</b>	<b>\$ 3,480</b>

<b>TOTAL ANNUAL COSTS FOR 3 STUDIES</b>	<b>\$13,835</b>
---	-----------------

The three watershed studies- Alsea, Hinkle, and Trask, have been able to leverage OWEB's substantial investment against an even larger operating budget from diverse funding sources. The operating budget for the three studies is approximately \$695,000-\$1,527,000/year for a total anticipated cost of \$10,545,000

when the project is complete. Funding sources include but are not limited to ODF, NCASI, OFRI, BLM, Douglas County, OFIC, Weyco, USGS, OSU, EPA, and other Grant money.

The research and monitoring conducted under the three watershed studies benefits the Oregon Plan. These studies address effectiveness of current forest management (a critical component of the Oregon Plan), across multiple landowner types (State, Private, and Federal), multiple regions, and at a watershed scale. The Alsea, Hinkle, and Trask studies include biological and downstream responses to forest management. No other project currently addresses all of these topics. Furthermore, effectiveness monitoring is currently recognized as a knowledge gap for the Oregon Plan. This research compliments other OWEB research focused on status and trends or restoration. In fact, the Alsea Study will evaluate restoration as well as general forest management.

While long-term studies are needed to address these kinds of effectiveness questions, they also require annual equipment repair and replacement. Thus, we are now faced with repairing and replacing equipment initially purchased with OWEB capital investments. Not maintaining equipment is not an option. It could result in temporally and spatially inconsistent data collection, lower data quality, data gaps, or complete loss of data stations if damaged equipment is not replaced. These types of issues can limit final study conclusions.

We estimate that the WRC can cover some of the maintenance costs. Examples could include batteries or catastrophic damage both of which were not included in the estimate. The WRC funds will come from current funding sources in proportions to their relative investments (i.e. ODF, NCASI, OFRI, BLM, Douglas County, OFIC, Weyco, and USGS). Given our available budget for equipment repair, we estimate the following maintenance grant requests to OWEB through the life of these studies as follows:

- 13k/year from 2009 - 2011 (Hinkle will be done),
- 10K/year from 2012-2016 (Trask will finish),
- 5K in 2017 (Alsea will finish)

Actual maintenance costs may differ from this estimate and may vary from year to year. While large storm events can be particularly devastating to instream equipment, even average storm events cause damage. Some equipment is simply limited in longevity or needs battery upgrades and replacements (e.g. temp probes). Other equipment, by design is subjected to damaging floods (TTS probes and samplers). Therefore it is reasonable to anticipate annual maintenance will be needed. Our estimates are based on knowledge from principle investigators who have experience with other large scale, long term studies (e.g. H.J. Andrews, Hinkle Creek)

We can only estimate what we would purchase based on operation for the last several years. Luminescent DO and temperature probes need to be maintained every year or two. We have had vandalism of cables and theft of instruments over the last couple years. In these damp locations electronic can short out.

We recognize multiple requests for high priority work outweigh available OWEB funds. We appreciate OWEB's past support and investment in this well-designed set of watershed studies. We do not plan to solicit additional funding from OWEB but there could be an unforeseen, compelling development in the future that might warrant a request. Because we have the basic watershed research structure in place these sites become high valuable for "add-on" studies. For example, the question about stormwater runoff and herbicides can be address at these sites in a much tighter experiment and at lower cost than it would elsewhere.

We appreciate your consideration of this request. Any questions should be forward to Chris Jarmer or Liz Dent.

Chris Jarmer  
Oregon Forest Industries Council  
503.586.1243

Liz Dent  
Aquatic Specialist  
State Forests Program  
Oregon Department of Forestry  
Phone Numbers:  
Philomath: 541.929.9168  
Salem: 503.945.7371