

January 10, 2007

MEMORANDUM

TO: Oregon Watershed Enhancement Board

FROM: Greg Sieglitz, Monitoring and Reporting Program Manager

**SUBJECT: Agenda Item I: Oregon Plan and Effectiveness Monitoring Products
January 24-25, 2007 OWEB Board Meeting**

I. Introduction

This staff report describes the recent progress on implementation of the Monitoring Strategy for the Oregon Plan for Salmon and Watersheds and OWEB's Effectiveness Monitoring Program. This report also requests funding for the Center for Statistical Design and Analysis at Oregon State University and for the second year of livestock exclusion riparian project evaluations.

II. Background

In September 2004, the Board approved an implementation plan for the effectiveness monitoring program. This program is designed to fulfill specific needs identified within the Monitoring Strategy of the Oregon Plan for Salmon and Watersheds. The Monitoring and Reporting Program has made significant progress on a number of fronts including the evaluation of western juniper removal projects, successful completion of the effectiveness monitoring workshop, and implementation of an effectiveness monitoring program to evaluate riparian livestock exclusion projects.

III. Effectiveness Monitoring Program Activities

A. Western Juniper Removal Project Evaluation

In the report summarizing the results of monitoring the effectiveness of OWEB-funded western juniper treatments (OWEB Contract 204-937), a set five of recommendations were proposed. (Attachment A) The first three recommendations are to assist in the future selection and prioritization of sites for treatment, to offer guidance in pre-treatment inventory of proposed treatment areas, and to offer treatment options based on project area conditions and site potential. The products derived from these recommendations will have direct application to OWEB's current juniper treatment program. They are considered essential to effective treatment and effectiveness monitoring efforts.

Based on the first three recommendations OWEB staff recommend contracting with a consultant for the development of a field manual that will guide OWEB regional program representatives, regional review teams (RRTs), soil and water conservation district (SWCD) and watershed council staff in identifying and designing OWEB-funded juniper treatment projects. In addition to, and concurrently with the development of the field manual, a two

day workshop will be conducted for invited participants from OWEB, the RRTs, SWCDs, and watershed councils. This workshop will allow those personnel most directly related to the grant application process to observe and to discuss project results as influenced by site selection, pre-treatment conditions, treatment methods and follow-up treatments related to the degree of project success.

The time line for field manual development and the juniper treatment workshop is:

1. An outline of the field manual for OWEB review and comment. **Delivery: February 2007**
2. A two day field workshop for invited participants to apply the concepts, methods and techniques contained in the draft field manual. **Delivery: June 2007**
3. Field manual completed. **Delivery: July 2007**

The final two recommendations are to encourage OWEB's continued effectiveness monitoring program (Recommendation #4), and OWEB solicitation and support of further scientific research in watershed rehabilitation (Recommendation #5). Based on Recommendation #4, OWEB staff also recommend completing effectiveness monitoring in four additional counties, Grant, Harney, Lake, and Klamath. Six completed juniper removal projects will be monitored for effectiveness in Grant and Harney counties and six projects will be monitored in Klamath and Lake Counties. Monitoring will consist of on-site observation and measurements of soil and plant community response to the treatments at the selected locations, and where possible, adjacent un-treated sites will be used as the pre-treatment comparison area. Each project visit will include an interview with the landowner, when possible, and monitoring transects using the appropriate monitoring protocols and photos of the treatment and comparison areas. The results of monitoring and field observations will be documented in individual project reports and in a summary report on all projects.

The time line for the evaluation of these projects is:

1. An evaluation report for each project visited incorporating photos and the results of monitoring and field observations of pre and post-treatment areas. **Field work to be conducted in June and July 2007**
2. A summary report that combines and discusses the findings from all visited treatment locations. **Delivery: September 2007**
3. A briefing for OWEB staff on the results of the evaluations. **Delivery: September 2007**

The requested budget for the proposal is \$20,000 to come from the Effectiveness Monitoring budget.

B. Center for Statistical Design and Analysis

In 2001, the U.S. Environmental Protection Agency (EPA) funded a pair of four-year projects for the purpose of improving the quality of scientific investigation that has been used extensively in Oregon and elsewhere. The two studies were; "Designs and Models for Aquatic Resource Surveys" at Oregon State University (OSU) and "Space-Time Aquatic

Resources Modeling and Analysis Program” at Colorado State University. The focus of these projects was the statistical design and analysis of surveys of aquatic resources, with dual objectives of developing methodology and transferring the methodology to states and tribes. These programs enabled the development of a close working relationship between the Oregon Plan for Salmon and Watersheds Monitoring Team scientists, statisticians at EPA, and a group of statisticians at OSU. This work was central to the scientific backbone of the Coastal Coho Assessment and the subsequent “no list” decision by NOAA Fisheries.

Staff propose the Board provide bridge funding for the Center for Statistical Design at OSU to continue the statistical outreach and support for Oregon Plan agencies. OSU is in the process of pursuing federal funding to provide the Center with increased capacity to provide statistical support for local groups (e.g. watershed councils), as well as enhanced value to Oregon Plan agencies. (More information on the proposal is provided in Attachment B.)

The requested budget for the proposal is \$87,036.

IV. Recommendation

Staff recommend the Board approve:

- A. \$20,000 from reserved Effectiveness Monitoring funds for the Western Juniper Removal Project Evaluation as described in section III. A; and
- B. \$87,036 of non-capital funds for the Center for Statistical Design and Analysis as described in section III. B.

Attachments

- A. OWEB Juniper Treatment Effectiveness Monitoring Final Report
- B. Center for Statistical Design Proposal

OWEB Western Juniper Removal Effectiveness Monitoring: Expanded County Evaluation and Tool Development

Project Description:

Task 1. Monitoring of Juniper Projects

Effectiveness monitoring of OWEB funded treatments of western juniper will be expanded to include six projects in Klamath and Lake Counties and six projects in Grant and Harney Counties. Under OWEB contract #204-937, seven treatments were monitored in the John Day/Clarno Uplands in the Deschutes and John Day River basins in Crook and Wheeler counties. With the assistance of OWEB staff, the projects to be monitored will be selected for their potential to broaden the understanding of the effectiveness of various treatments in these additional counties of Oregon.

Contractor responsibilities will consist of on-site observation and measurements of soil and plant community response to the treatments at the selected locations and adjacent untreated sites will be used as the pre-treatment comparison area. Each project visit will include an interview with the landowner; monitoring transects using the appropriate monitoring protocols and photos of the treatment and comparison areas. Survey methods include determination of soil depth, surface and subsurface soil textures, subsurface restrictions and soil limitations; determinations of pre- and post treatment plant community composition and cover; rangeland health assessment of both pre- and post-treatment conditions, analysis and synthesis of treatment effects on soil surface conditions, plant community composition, site hydrology, wildlife habitat, forage production and spring and seep flow. The results of monitoring and field observations will be documented in individual project reports and in a summary report on all projects.

Products to be delivered upon completion of Task 1 are:

1. An evaluation report for each project visited incorporating photos and the results of monitoring and field observations of pre- and post-treatment areas.
Field work to be conducted in June and July, 2007
2. A summary report that combines and discusses the findings from all visited treatment locations.
Delivery: September, 2007
3. A briefing for OWEB staff on the results of the evaluations.
Delivery: September, 2007

Task 2. Workshops and Field Manual Development

This task focuses on the development of a field manual that will present guidance to OWEB Field Representatives and technical review committees and soil and water conservation district and watershed council staff in identifying and designing OWEB-funded juniper treatment projects.

The document is anticipated to consist of several sections, each outlining a specific phase in the design and implementation of an ecologically sound juniper treatment project. The manual will contain information meant to assist field staff in identifying and documenting the need and purpose of treatment; designing a project and selecting treatment methods (including seeding), and developing post-treatment management strategies. The manual will also, by way of reference, identify protocols for pre-treatment inventory and post-treatment monitoring. Drafts of document will be provided to scientists and practitioners specializing in the ecology of juniper and management, and to OWEB staff, for their review and comment prior to its final submission.

The material in the draft document will be field-tested and modified, as part of several two day field workshops (Recommendation 1) conducted for invited participants from OWEB, its technical review committee, conservation districts and watershed councils.

Products to be delivered during and upon completion of Task 2:

1. An outline of the Field Manual for OWEB review and comment
Delivery: February 2007
2. Several two day field workshops for invited participants to apply the concepts, methods and techniques contained in the draft field manual.
Delivery: June 2007
3. Field Manual described above.
Delivery: July 2007

Estimated Amount: \$20,000

Project Location: Klamath, Lake, Harney, Grant Counties

OWEB Basin: Lakes and John Day

Anticipated Begin Date: February 1, 2007

Projected End Date: February 1, 2008

Will Amendments be Allowed: ___ Yes __X__ No

OWEB Project Manager: Greg Sieglitz

Proposal for Statistical Support for the Oregon Plan

Problem Statement

Through the coastal Coho assessment project, it has become clear that state agencies and local entities do not have access to statistical support, either personnel or statistical tools, needed to design effective monitoring plans and to analyze the data collected. The goal of this request is to provide statistical support to state agencies and local entities. We propose to consult with operational personnel to identify issues needing statistical support, identify or develop a statistical resolution, create tools implementing these solutions, and place the tools in the hands of user groups and the Oregon Plan Monitoring Team. Issues that have already been identified include trend detection using a rotating panel sampling design; sampling patchy populations; and integrating fish population assessments with Total Maximum Daily Loads (TMDLs).

Background

In 2001, the U.S. Environmental Protection Agency (EPA) funded a pair of four-year, multimillion dollar projects: "Designs and Models for Aquatic Resource Surveys" at Oregon State University (OSU) and "Space-Time Aquatic Resources Modeling and Analysis Program" at Colorado State University. The focus of these programs was the statistical design and analysis of surveys of aquatic resources, with dual objectives of developing methodology and transferring the methodology to states and tribes. These programs enabled the development of a close working relationship between Oregon Plan for Salmon and Watersheds Monitoring Team (OPMT) scientists, statisticians at EPA, and a group of statisticians at OSU. This partnership between OSU statisticians and the OPMT has been vital to the success of the monitoring program.

Project Request

In order to ensure the continuation of this relationship after the EPA project ended in 2006, the OSU statistics group requests funding in the amount of \$87,036 for one year beginning in March of 2007. This would support two part-time faculty members and one graduate student. Details of the budget are given below. This amount represents an initial investment in a Natural Resource Monitoring Statistical Support Unit at OSU.

Project Details

The group will initially focus on currently identified issues. The first is methods for sampling patchy populations. This will involve modifying the existing procedure used to determine random and spatially balanced sampling sites for coastal Coho monitoring. Data, collected without attention to randomness and balance, contain limited information and therefore are not an efficient use of monitoring effort. Populations east of the Cascades are patchier than the coastal populations, and the existing tools for drawing the sample are not optimal in this case. Further research is needed to tailor current tools for this situation.

The second issue is the analysis of monitoring data to detect temporal trend. Preliminary work is currently underway analyzing habitat data to detect an increase or decrease of Coho habitat over time. However, existing data analysis procedures are not appropriate

