



Oregon

Theodore R. Kulongoski, Governor

Oregon Watershed Enhancement Board

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August 28, 2008

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 K-1: Oregon Plan Products
September 16-17, 2008 OWEB Board Meeting**

I. Introduction

This report seeks Board approval of two specific Oregon Plan Products requests for the Department of Environmental Quality (DEQ) Volunteer Water Quality Monitoring Program and the Oregon Explorer. This report continues the follow-up from the July 2007 Board Planning Session where members expressed interest in discussing non-competitive grant awards in more detail prior to funding decisions, and describes four other potential Oregon Plan Products.

II. Background

OWEB provides support for Oregon Plan-related products through direct allocations of non-capital funds. The Board has retained an Oregon Plan Products non-capital spending plan line item for each of the last several biennia to be utilized for Oregon Plan needs established through the Oregon Plan Monitoring Team and Core Team that do not fit well into the current suite of grant offerings provided through the regular grant program.

At the 2007 Planning Session in Maupin, the Board decided to delay 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 2008 Board meeting, staff provided an update about the 2008 PCSRF grant award of \$8.2 million and briefed the Board about several high priority Oregon Plan Products. These products will inform such activities as project planning and implementation by watershed councils to reporting on Key Performance Measures by OWEB and other agencies.

III. Oregon Plan Products Proposed for Funding

Two of the potential Oregon Plan Products discussed with the Board at the May meeting are ready for Board consideration. The following sections describe each proposal.

A. Equipment for DEQ's Volunteer Water Quality Monitoring Program

DEQ provides equipment, training, database support, and analytical assistance for volunteer groups such as watershed councils and soil and water conservation districts (SWCDs) through the Volunteer Water-Quality Monitoring Program. OWEB has

traditionally provided funding for program coordination and the purchase of equipment to be used by volunteer groups as part of this DEQ program. The equipment enables local groups to expand the State's water-quality monitoring network informing both local watershed needs and the larger Oregon Plan needs. Over 50 groups from around the state have participated in this program to date. Data have been submitted from over 1,000 locations throughout Oregon.

The demands of the program results in the need for periodic replacement and upgrade of monitoring equipment in order to continue to make these technical resources available to local groups. Currently, 90 percent of the volunteer monitoring equipment is 10 years or older. The budget in Attachment A provides a detailed accounting of the equipment that is in need of updating and a justification for proposed purchases. The total OWEB funds proposed for the equipment is \$33,165.

Water-quality monitoring is the second largest investment area that OWEB has made in the monitoring category of projects. Investment in volunteer monitoring equipment ensures that local groups have the technical resources they need to collect high-quality data. The monitoring conducted by watershed councils also is considered by DEQ to be a valuable contributor towards assessing the effectiveness of the agency's TMDL program because without the local scale monitoring, DEQ would be unable to evaluate water quality improvements at that scale.

B. Oregon Explorer Natural Resources Digital Library

The Board has entertained and funded several proposals from the Institute for Natural Resources and Oregon State University Libraries associated with the development and deployment of the Oregon Explorer during the last three biennia. The proposals began with the North Coast and Willamette Basin Explorer sites. These early efforts were pilot projects testing both the concepts and technical aspects of the Explorer design. In 2006, the Board funded the Umpqua Explorer, which served as a pivotal moment for the Explorer development team, because it was driven by the needs expressed by the local communities and the ongoing management and use of the site is also a locally-based operation (as described by the Partnership for Umpqua Rivers and the Umpqua SWCD at the March 2007 Board meeting).

This evolution of the program matured further with the proposal funded by the Board in September of 2006 that enabled OWEB to provide its Oregon Watershed Restoration Inventory database (OWRI) online for the first time. This included the ability to view maps and download data from the Explorer website. That Board investment also established the first online submittal of information to OWEB from the public; thus, streamlining the reporting requirements for grantees and data-entry responsibilities for the agency. Grantees and others are able to submit the lengthy OWRI forms to OWEB; and, when a user hits the send button, the information is fed directly into OWEB's database. Within the first year of deployment, 63 percent of OWEB grantees are already using this online tool for reporting. This usage rate greatly exceeded staff expectations.

The current proposal before the Board represents a hybrid of both the Umpqua Explorer and the OWEB-focused Explorer work funded two years ago. Capitalizing on the strengths of these two projects, and learning from the lessons of the pilot projects on the

North Coast and in the Willamette, OSU staff embarked upon a campaign to develop project ideas through discussions with OWEB staff and locally based organizations.

Recent discussions among staff from OWEB, watershed councils, other local groups, and the Oregon Explorer Program, highlight the ongoing importance of addressing locally-derived and OWEB specific needs. User comments and discussions with Oregon Plan partner agencies underscore the benefits of a single point of public access to restoration related data and information, and the value of active local participation in keeping the Explorer sites relevant and useful.

INR and OSU Libraries are proposing to address OWEB's priorities for making technology useful to local groups and improving information flow and data-sharing between local groups and agencies. There are four specific segments to the current proposal:

1. Updating OWRI products and enhancing the Restoration Visualization Tool;
2. Creating a Lakes Basin Explorer portal;
3. Creating a Deschutes Basin Explorer portal; and
4. Prototyping a spatially based Data Management System for Oregon Plan related information, such as location of and data from monitoring projects.

Components 1 and 4 of the project are consistent with OWEB-identified priorities for Oregon Explorer and the creation of Oregon Plan Products that improve information flow and data sharing among local groups, such as watershed councils, SWCDs, and agencies. Components 2 and 3 not only respond to a direct request from local groups in the Lakes and Deschutes basins, but they are in line with OWEB's emphasized importance of local groups articulating the need and utility for an Oregon Explorer portal. Letters of support are included in Attachment B.

With the completion of these basin portals, one third of the state's Oregon Plan basins would be represented in the Oregon Explorer. These sites also would be the first basin portals representing eastside watersheds and environments. Staff have worked with INR and OSU Libraries to develop the current proposal, which is included as Attachment C. The total OWEB funds proposed for the Oregon Explorer is \$152,328.

Through this combination of OWEB, local, and interagency focused components, the proposed Oregon Explorer Phase II project will expand the capacity of watershed councils and local groups to conserve and restore habitats, track the results of their work, and share successes and opportunities with others in their basin and around the state.

IV. Oregon Plan Products for Future Consideration

The following are updates regarding Oregon Plan Products that staff are currently considering and that would improve accessibility to technological tools, data, and information for Oregon Plan partners in the future.

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

In recent months, Oregon Department of Fish and Wildlife (ODFW) has secured funding to update spatial datasets for 1) fish habitat distribution, and 2) fish-passage barriers. By the end of 2008, ODFW anticipates making up-to-date fish habitat distribution data available

online for the following species: coho salmon, winter and summer steelhead, spring and fall Chinook salmon, and chum salmon. A statewide, spatially based dataset of fish-passage barriers is expected to be completed by the summer of 2009. This dataset will incorporate information from ODFW, Oregon Department of Transportation, and the Bureau of Land Management about fish-passage barriers.

These efforts will lay the foundation for future work by ODFW to create a comprehensive, web-accessible data management system for fish-passage barriers. Data in this system would be regularly updated to reflect new inventories of barriers and restoration actions undertaken to address fish-passage problems. The database would include data from additional sources such as OWEB, watershed councils, soil and water conservation districts, tribes, Oregon Water Resources Department (OWRD), U.S. Forest Service, and industrial landowners. This web-based system is intended to allow users to depict fish habitat and barriers on maps, assess the level of severity of different barriers, and use decision-support tools to prioritize barrier removal restoration projects at multiple geographic scales around the state. OWEB funds would be used for the staff time and costs related to updating, developing, and distributing the data layers that would be generated under this effort.

B. Equipment and Data-Sharing Agreements for Stream flow Monitoring

During the previous legislative session, OWRD initiated discussions with OWEB staff about the importance of upgrading, installing, and maintaining Oregon's network of stream gages. These discussions included a potential partnership with OWEB on joint funding of priority stream gages for flow and water quality monitoring if certain legislation was passed to expand OWRD's authorities for stream flow measurement. The legislation did not pass, but the need for more and better coordinated stream flow measurement continues.

With the development of the Governor's H2O: Headwaters to Ocean and Climate Change initiatives, the discussions with OWRD about stream flow measurement have re-emerged. OWEB has funded stream flow monitoring stations, devices, and staff in parts of the state. It is not clear how these particular investments align with and complement the OWRD priorities for stream flow. It is also not clear whether the data generated by the OWEB-funded projects has been made available to the OWRD or general public. Staff expect to continue discussions with OWRD staff and may present a funding proposal to the Board at a future meeting.

C. Watersheds Research Monitoring Equipment

The Oregon Watersheds Research Cooperative (WRC) is implementing watershed scale research projects in three areas (Trask, Hinkle, and Alsea), in part, through OWEB assistance. The projects are designed to evaluate contemporary forest harvest and develop an understanding of the effect of those practices on physical and ecological processes in the landscape. OWEB has funded capital expenses through two separate research grants for the WRC.

The WRC approached staff this spring with a request for additional funding to cover research equipment repair and replacement costs, which are estimated at \$60,000 per year. The WRC and their partners recognize that the state has several priority Oregon Plan projects and has requested that OWEB consider partial funding to cover 50 percent of the estimated equipment maintenance expenses, or \$30,000 per year. Staff wish to have a dialogue with

the Board about these types of requests and to develop some policy considerations for future deliberations about funding monitoring equipment repair and replacement.

V. Staff Recommendation

Staff recommend the Board approve:

- A. Up to \$33,165 in non-capital funds for an interagency agreement with the Oregon Department of Environmental Quality for the replacement of volunteer monitoring equipment; and
- B. Up to \$152,328 in non-capital funds for an interagency agreement with the Institute for Natural Resources and OSU Libraries for web based enhancements for the Oregon Watershed Restoration Inventory, development of Oregon Explorer sites for the Lakes and Deschutes basins, and creation of a spatially based data management prototype for OWEB.

Attachments

- A. DEQ Volunteer Monitoring Equipment Budget and Justification
- B. Letters of support for Oregon Explorer
- C. Oregon Explorer Proposal and Budget

2008 ODEQ Volunteer Monitoring Equipment Needs Attachment A

Parameter	Item	Quantity	Unit Cost	Total Cost
Temperature	HOBO® Pro v2 Water Temperature Data Logger	50	\$106.00	\$5,300.00
	HOBO® Pro v2 Water Temperature Data Logger Base	4	\$110.00	\$440.00
	HOBOWare® Pro for Windows	4	\$99.00	\$396.00
				subtotal= \$6,136.00
Bacteria	Idexx Sealer	2	\$430.00	\$860.00
	Idexx Incubator	2	\$675.00	\$1,350.00
	Idexx Fluorescent UV light with 110V AC cord	2	\$119.00	\$238.00
	Idexx view box	2	\$189.00	\$378.00
	Idexx Quanti-Tray/2000 Rubber insert	2	\$65.00	\$130.00
			subtotal= \$2,956.00	
pH	Beckman 240 φ pH/temp	17	\$435.00	\$7,395.00
	Orion Ross pH Combination Electrode	17	\$258.00	\$4,386.00
	ATC probe	17	\$108.00	\$1,836.00
			subtotal= \$13,617.00	
Turbidity	HACH Turbidimeter 2100P	2	\$837.00	\$1,674.00
			subtotal= \$1,674.00	
Stream Discharge	Marsh-McBirney Flo-Mate 2000 Velocity Meter	2	\$3,400.00	\$6,800.00
	4 ft. USGS Top Setting Wading Rod	2	\$380.00	\$760.00
	200 ft Sokkia/Eslon Fiberglass Tape Tag Line	2	\$80.00	\$160.00
			subtotal= \$7,720.00	
Conductivity	Meter- YSI Model 30	2	\$531.00	\$1,062.00
			subtotal= \$1,062.00	
Grand Total =				\$33,165.00

Budget Justification

The largest portion of this request is \$13,617 for replacing pH meters purchased 10 years ago. These meters have been demonstrating problems for several years and currently are proving very unreliable for many groups. Other large costs include expanding the capability of the program to support groups interested in doing fecal bacteria monitoring (2 systems for \$2,956) and measuring stream discharge (2 systems for \$7,720). Both fecal bacteria and stream discharge are parameters DEQ often has to deny support for because the agency does not have sufficient equipment to support all the groups wishing to do this monitoring. For TMDL effectiveness monitoring, both of these parameters will be important. Continuous temperature probes need to be replaced and purchasing 50 probes (\$6,136) will be required to maintain a limited supply to support groups. Replacements for failing 10 year-old turbidity meters (\$1,674) and conductivity meters (\$1,062) are also requested.

**Harney County
Watershed Council**450 N Buena Vista #4
Burns, OR 97720

Phone: 541-573-8199

Fax: 541-573-8370
Karen.Moon@oregonstate.edu

July 24, 2008

Received By
OWEB

AUG 07 2008

Oregon Watershed Enhancement Board
775 Summer Street NE, Suite 360
Salem, OR 97301-1200

Re: Support of Oregon Explorer grant request

To the Board:

The Harney County Watershed Council, with many others in this area, will be a partner in, and major contributor to the proposed Lakes Basin Portal in the expansion of the Oregon Explorer project. We feel that this venue will allow us to address many of our challenges in our efforts to provide a framework for education, coordination, and cooperation among all interested parties for the development and implementation of watershed action plans beneficial to the people and the environment. We feel that the portal will be beneficial in our efforts at education, to help "get the message out". It will be a single-source site for resource managers at all levels – public and private – to look for information relevant to this region. It will also be a valuable source of information for the casual visitor, to get good, sound, scientific information about the ecosystems, watersheds, wildlife, and all things reliant on the land base here, and not necessarily have to rely on unfounded comments, media statements, emotional, and often political rhetoric.


There is a lot of good science available on the area and its resources. It is just not available in one place. We have the luxury of having one of our major partners, the Eastern Oregon Agricultural Research Center, doing the majority of their research on the ecosystems of the Northern Great Basin, and associated Sage Steppe Environments. They are a significant source of science, but there are others. Everyone doing research in this area spends a great deal of time compiling and synthesizing data. We feel that our efforts, with the Oregon Explorer project, will help to alleviate that time-consuming situation.

As resource management, and managers, are attempting to get away from litigation stagnation by doing effective, proactive project design and assessment, it is imperative that they, and we, have a good source of information at hand.

We have been encouraged, and inspired by the existing Umpqua Basin Portal of the Oregon Explorer Project. We hope to be able to develop the same kind of tool, specific to our area.

Thank you for your support of the Oregon Explorer proposal.

Respectfully,



Bill Renwick for the HCWC



Tim Smith, Chairman, Harney County Watershed Council.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Burns District Office
28910 Hwy 20 West
Hines, Oregon 97738

IN REPLY REFER TO:

8223 (OR-026)

AUG 13 2008

Oregon Watershed Enhancement Board
775 Summer Street, NE, Suite 360
Salem, Oregon 97301-1290

Re: Support of Oregon Explorer Grant Request

Dear Oregon Watershed Enhancement Board Members:

This letter is provided in support of an opportunity to create the Lakes Basin Portal on the OregonExplorer.info website supported by the Oregon State University Library and the Institute for Natural Resources. We have reviewed other portals, including the Umpqua Basin Explorer and are encouraged by the application of this website to our very important corner of Oregon. You will likely receive similar letters of support from the Steens Mountain Advisory Council and others who are committed to providing good information for both land managers and the public as we engage in restoration of our watersheds.

Land use, watershed and stream restoration and other natural resource issues are substantially tied to our communities; and current issues include juniper encroachment, wildfire, sagebrush habitats and threatened species, water availability and use, and economic development and its effects on natural resources. Information related to these issues will be displayed geographically with Oregon Explorer, with associated land use and/or scientific papers also provided.

The Bureau of Land Management (BLM) maintains a substantial amount of geographically tied information on public land resources on the BLM website, but much of this is only available upon request. However, the BLM does host a website from which the public can access land use plans and environmental analyses documents. If links to our public websites can be posted on the Oregon Explorer site, and BLM can provide certain mapped natural resource and land use information to be hosted by the site, the public and all agencies will have better, one-point access to helpful public information.

BLM's Burns District is committed to providing a substantial amount of content and expertise to develop Phase I of the Lakes Basin Portal. This includes the staff time to coordinate portal development in partnership with Oregon State University, identify and provide additional existing public information links (such as with Eastern Oregon Agricultural Experiment Station, the Sagebrush Cooperative, and others) and to provide geographically tied and publicly available information from BLM's data collection. Additional phases would have similar support from BLM.

Please contact Karla Bird, Andrews Field Manager at (541) 573-4425, if you have any questions.
Thank you for considering this opportunity.

Sincerely,

/s/ Dana Shuford

Dana R. Shuford
District Manager



DESCHUTES RIVER CONSERVANCY

Deschutes River Conservancy
700 NW Hill St
Bend, OR 97701

August 13, 2008

Oregon Watershed Enhancement Board
Attn: Renee Davis-Born
775 Summer Street NE, Suite 360
Salem, OR 97301-1290

Oregon Watershed Enhancement Board,

The purpose of this letter is to voice our support for the Oregon Explorer Phase II proposal. The Oregon Explorer has demonstrated its value as an information portal for communities across Oregon. We believe that the Deschutes Basin Explorer outlined in the proposal will provide a central point for sharing information across agencies and organizations, allowing for better communication and increasing our efficiency.

The Deschutes River Conservancy has partnered with federal, state, and local agencies and non-profits to restore the Deschutes River and its tributaries. Each entity has a different focus but we share a common vision of functioning rivers that support self-sustaining fish and wildlife populations. Over the last ten years, we have coordinated our activities and developed joint restoration strategies for reaches across the basin.

The recent steelhead reintroduction to the upper Deschutes Basin reinforced the need to improve information sharing across these partners. Each organization currently maintains its own collection of local references, geographic information, and environmental data. As we implement our shared strategies and monitor our overall effectiveness, we need to share this information between agencies, organizations, and the general public. The Deschutes Basin Explorer will provide a medium to share data, communicate results, and improve accountability for agencies and organizations implementing restoration activities across the basin.

We thank you for your consideration, and we hope that you approve this proposal.

Sincerely,

Scott McCaulou
Senior Program Manager
Deschutes River Conservancy

700 NW Hill Street • Bend, Oregon 97701
(P.O. Box 1560 • 97709)
541.382.4077 • Fax 541.382.4078
www.deschutesriver.org / info@deschutesriver.org



August 12, 2008

Renee Davis-Born
Oregon Watershed Enhancement Board
775 summer Street NE Suite 360
Salem, OR 97301-1290

Re: Support for Oregon State University Oregon Explorer Phase II Proposal

Dear Renee:

I am writing to express support for the Oregon State University Oregon Explorer Phase II proposal that has been submitted to the Oregon Watershed Enhancement Board.

The proposal includes a component that focuses on the creation of a Deschutes Basin Explorer, which would provide a centralized location for information sharing, data storage, and communication related to watershed restoration in the Deschutes. As described in the proposal, this type of a tool would complement the tremendous amount of ongoing watershed restoration activity in the Deschutes by making important information available through an organized, internet-based system. This would allow local organizations like the Watershed Councils, Soil and Water Conservation Districts and others to better communicate and organize their information.

Over the past several years, local organizations have worked toward building improved internet access to watershed information. For example, the Upper Deschutes Watershed Council has developed an online database of local water quality data that is used in conjunction with existing statewide database systems, and many local organizations have posted numerous reports and other information on their websites. However, this information has never been compiled into a single location, thus making it difficult to have quick, easy access to important data, reports, maps and other resources. The proposed Deschutes Basin Explorer would address this issue and lead to greatly improved access to information.

I am looking forward to working with the team from Oregon State University on the development of the Deschutes Basin Explorer. Please let me know if you have any questions or would like to discuss the proposed further.

Sincerely,

A handwritten signature in black ink, appearing to read "Ryan Houston".

Ryan Houston
Executive Director
Upper Deschutes Watershed Council

Steens Mountain Advisory Council

Council Members:

Pamela Hardy, Chair
Michael Beagle, Vice Chair
Richard Angstrom
Brenda Sam
David Bilyeu
William Renwick
Hoyt Wilson
Fred Otley
Stacy Davies
Daniel Haak
Steve Purchase, State Liaison

Designated Federal Official:

Dana Shuford
Burns District Manager
Burns District Office
28910 Hwy 20 West
Hines, Oregon 97738

August 12, 2008

Renee Davis-Born
Data Analyst and Information Specialist
OWEB
775 Summer St. NE, Suite 360
Salem OR 97301-1290

Dear Renee,

I am writing today on behalf of the Steens Mountain Advisory Council (SMAC) to express the Council's support for the Oregon Explorer's grant application for the development of a Lakes Basin Portal.

The SMAC was established by Congress as a collaborative group of differing interests to advise the BLM on creative ways to manage over a half million acres of public land in the Steens Mountain area. The group includes representatives for ranchers, environmentalists, outfitters, the Burns Paiute tribe and other disparate interests. Although the group often works well together, and we agree on a common goal of creating ecosystem health, we often disagree on what that looks like, or how to achieve it. We often discover that different representatives have different beliefs about what the science really says. For example, is there really no known solution to cheat grass? What impacts do large predators actually have on cattle productivity? How does long light grazing v. heavy short grazing impact vegetation composition? And does that matter to wildlife? Some people think they've seen science on these questions, but few (none in our group) can regularly put their finger on the actual research. We believe that if we were to have the known data easily accessible, we would be far more likely to be able to reach the creative solutions our Congressional charter asks of us.

In short, there is a substantial unmet need for data and research related to the entire area, and the portal would be well used here. It will be critical infrastructure for long term watershed enhancement. There is already strong momentum toward creative, cooperative problem solving for watershed and upland ecological health, but that effort is regularly slowed by lack of data.

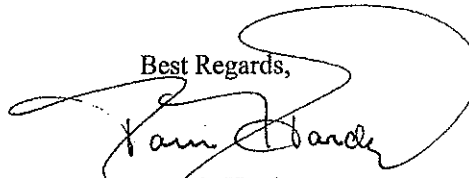
Because of this problem, the SMAC established a science subcommittee to help locate the missing information. The science subcommittee brought the existence of Oregon State University's Oregon Explorer project to the attention of the Council. The SMAC and BLM quickly realized that the Oregon Explorer would be an excellent place for locating these resources if a portal to the region was developed and the site populated with the resources currently scattered among many different agencies, organizations and researchers.

Additionally, since the creation of the SMAC in 2000 our members have observed a growing interest by other individuals, groups, and organizations in the region. Local officials concerned about the economic effects of land use decisions follow the developments carefully. Organizations concerned with fish and wildlife, wild and scenic rivers, wilderness preservation, recreation, grazing rights, hunting and horseback riding carefully follow - if not actively engage in - the decision making processes. Agencies and groups making decisions and recommendations about land use and natural resource policy need reliable, convenient, and equal access to relevant scientific information. Equal access to such data would allow all interested parties the opportunity to investigate, locate, and synthesize information for good policy and decision making on the issues affecting these natural resources.

The Steens Mountain Advisory Council supports the Oregon Explore grant application to the Oregon Watershed Enhancement Board for the development of a Lakes Basin Portal. We believe that, if implemented, this portal will become the key access point for the scientific information critical to making informed decisions about local stewardship.

Please feel free to contact me, (541) 550-7968 if you have any additional questions about the SMAC, or our support for the project.

Best Regards,

A handwritten signature in black ink, appearing to read "Pamela Hardy", written over a large, loopy flourish that extends to the right.

Pamela Hardy
Chair, Steens Mountain Advisory Council

Cc: SMAC members

Proposal and Project Description
from OSU Libraries and OUS Institute for Natural Resources (INR)
to the
Oregon Watershed Enhancement Board (OWEB) staff
for
Oregon Explorer Phase II
\$152,328 of OWEB funds out of a \$225,233 project total

1.0 Introduction

Since its launch in 2007, the Oregon Explorer has made important strides toward reaching its vision as a digital library providing access to natural resources information across the state. The OWEB support for *Phase I* of the Oregon Explorer (OE) allowed for a successful launch, and an increasing focus on watersheds and restoration. Additional major partnerships with the Department of Administration Services are integrating OE with the navigatOR GIS utility being created to develop and distribute spatial data in Oregon. Partnerships with the Department of Forestry, Land Conservation and Development, Fish and Wildlife, and others have led to the creation of topic portals for Wildfire Risk, Land Use, Wildlife, and Rural Communities.

In an effort to expand the capacity and useability of the Oregon Explorer (OE), over the last two years, the OE Team has been stepping up its outreach and marketing efforts. User comments and discussions with local groups and state and federal agencies have highlighted the benefits of a single point of public access to all topic relevant scientific, policy, and research information; and, the benefits of active local participation in the life cycle of OE portals. Recent discussions with OWEB also suggest several products that can expand the OE website's ability to address their priorities for making technology useful to local groups, and improving information flow and data-sharing between local groups and agencies.

While *Phase I* funding has been particularly important in expanding the watershed restoration inventory information, water quality information tools, and in expanding how a basin portal can work the *Oregon Explorer Phase II* project will further incorporate OWEB priorities and local requests to provide additional services and improve web-based access to comprehensive natural resources information

2.0 Project Description

The purpose of the *Oregon Explorer Phase II* project is to provide additional services and improve web-based access to comprehensive natural resources information by:

1. updating Oregon Watershed Restoration Inventory (OWRI) products and enhancing the OWRI Visualization Tool;
2. creating a Lakes Basin Explorer portal;
3. creating a Deschutes River Basin Explorer; and,
4. prototyping a spatially-based Data Management System for Oregon Plan related information.

Components 1 and 4 of the project are consistent with OWEB-identified priorities for *Oregon Explorer Phase II* and the creation of Oregon Plan products that improve information flow and data sharing between local groups, such as watershed councils and soil and water conservation districts, and agencies. Components 2 and 3, not only respond to a direct request from local groups in the Lake Basin and the Deschutes River Basin, but are in line with OWEB's emphasized importance of local groups articulating the need and utility for an Oregon Explorer portal. With the completion of these basin portals, one third of the state's Oregon Plan basins will be represented in the Oregon Explorer. These will also be the first basin portals representing Eastside watersheds and environments, as the Oregon Explorer currently features the Willamette Basin, North Coast, and Umpqua Basin.

Through this combination of OWEB/interagency-focused and locally-focused components, the proposed *Oregon Explorer Phase II* project will expand the capacity of watershed councils and local groups to conserve and restore habitats, track the results of their work, and share with successes and opportunities with other partners in the basin. It will increase the efficiency of restoration practitioners ability to get permits to do their work, to report on work done, to find partners for projects, and to get funding for additional work.

Component 1. Update OWRI products and enhance the OWRI Visualization Tool.

In *Phase I* of the Oregon Explorer, in conjunction with OWEB staff, INR and the OSU Libraries developed multiple approaches for accessing OWRI data. One approach was to present users with downloadable versions of the OWRI database in various formats. Another approach made the OWRI accessible through the OWRI Visualization Tool, which displays the locations of projects in the OWRI and allows users to obtain detailed information on any project.

To better provide current OWRI data to local groups, INR and the OSU Libraries propose to update OWRI products by 1) packaging a downloadable version of the OWRI database by basin, 2) making improvements to OE mapping tool(s) to address needs identified as important to OWEB (including those related to online submission of maps for the OWRI), and 3) updating OWRI products and data supporting the Restoration Visualization Tool to coordinate with the new SQL version of the OWRI database created by OWEB staff.

The OWRI Visualization Tool will also be enhanced to make it more accessible to local groups by 1) allowing users to overlay additional spatial datasets on restoration project data (e.g., fish distribution), 2) adding other restoration datasets, such as those from the U.S. Forest Service, Bureau of Land Management, and the Grande Ronde Model Watershed Council, and 3) making the Visualization Tool available based on watershed council boundaries.

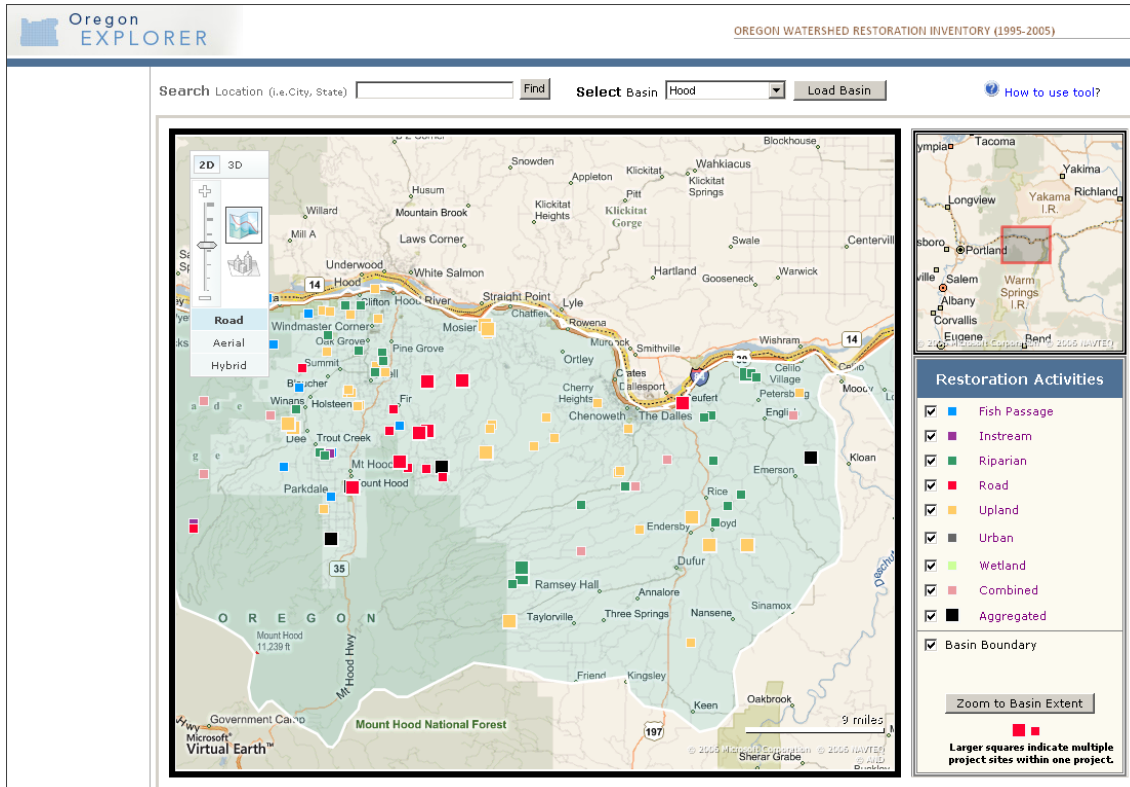


Figure 1. Current Version of Oregon Watershed Restoration Inventory Tool on Oregon Explorer (Hood River Basin featured)

Estimated cost: \$25,237 of OWEB costs (\$8,116 OSU Match, total of \$25,237)

Budget - OWRI Products and Visualization Tool				
	Project Months	Project Cost	OWEB Cost	OSU Match
Salaries				
INR Staff Costs	1.50	\$ 9,363	\$ 5,633	\$ 3,730
OSU Libraries Costs	5.25	\$ 20,758	\$ 17,109	\$ 3,649
subtotal - salaries		\$ 30,121	\$ 22,743	\$ 7,378
Travel		\$ 200	\$ 200	\$ -
Total - direct expenses		\$ 30,321	\$ 22,943	\$ 7,378
OSU Overhead (at 10%)		\$ 3,032	\$ 2,294	\$ 738
Total Costs		\$ 33,353	\$ 25,237	\$ 8,116

Components 2 and 3: Creating two Eastside Basin Portals

The Umpqua Basin Explorer will be used as the model for developing the basin portals. This effort is an excellent demonstration of participating in the life cycle of an Oregon Explorer portal – the active participation of local groups in the development, use, maintenance, outreach, and future fundraising of the basin portal.

Developed with the Partnership for the Umpqua Rivers (PUR), the Umpqua Basin Explorer portal is an ongoing collaboration to integrate the extensive information from the Umpqua Basin into a system that provides access to information and tools to assist local decision-makers, watershed groups, and landowners interested in watershed restoration. The success of the Umpqua Explorer provides lessons as to how to make the regional portals work, which primarily involves intense involvement of the local stakeholders. For the basin portals to succeed, there needs to be local ownership, and in moving forward to complete the vision, the Oregon Explorer team has focused on finding local demand for the tools and services and efficiency the digital library and portals can provide.

Component 2: Phase 1 of a Lakes Basin Explorer Portal

The Lakes Basin has been the center of extensive studies and assessments, organized by federal agencies, state agencies, and local restoration groups to address a variety of natural resource issues—all of whom have created significant amounts of data, analysis, and information. Upcoming management decisions within the Lakes Basin can be informed by new, comprehensive information. A limiting issue is that a large quantity of this data and information is not readily available to land-use practitioners, decision-makers, and the public in the basin.

Through a series of face-to-face meetings, e-mail communications, and phone calls, members of the Harney County Watershed Council, the Steens Mountain Advisory Council, and the Burns District BLM expressed keen interest in developing an Explorer portal for the Lakes Basin, which includes most of Harney County and Lake County (Figure 2).

Creating a Lakes Basin Explorer portal will enable local groups to better address natural-resource issues critical to their area by providing access to integrated information and tools to assist local decision-making by watershed groups, landowners, management entities, and others. The goals of the proposed Lakes Basin Explorer are to:

1. Provide a single point of electronic, public access to relevant scientific, policy and research information for the Lakes Basin;
2. Offer a place to organize, integrate and archive important documents, data, photos, videos, maps in a digital form that tie to a geographic database; and
3. Highlight one or more high-priority ecosystem restoration issues identified by local groups. Initial interest is in the issues around restoration in the uplands.

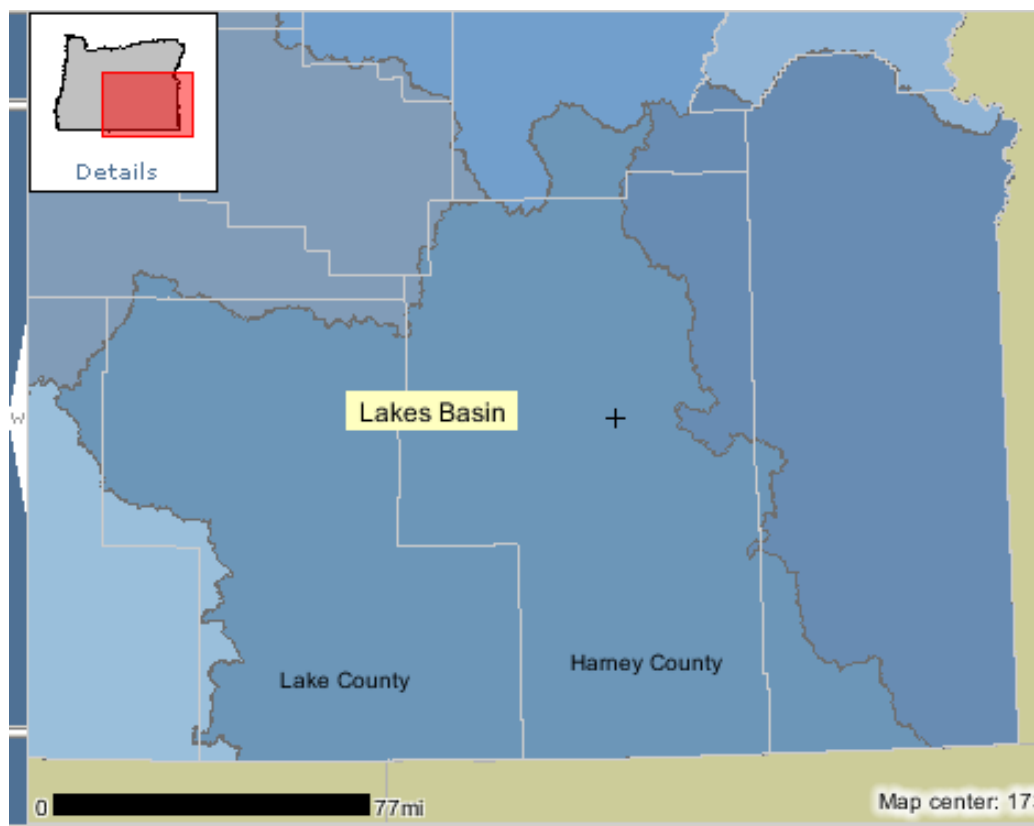


Figure 2. Geographic Extent of Lakes Basin

The Harney County Watershed Council, Burns District BLM, and the Steens Mountain Advisory Council’s request to develop a Lakes Basin Explorer portal ensures that a supportive partnership exists to assist with developing and maintaining the site over time.

Deliverables

- 1) Creation and release of the Lakes Basin Explorer (www.lakesbasin.info). It will be a web portal and digital natural resources library, with an initial focus on a high priority ecosystem restoration issue within the Lakes basin. The site will include a multi-media story, and it will prototype a tool for uploading photos from public sources.
- 2) Updated Oregon Explorer county pages for Harney County and Lake County. As the basin data and information is compiled and integrated for the Lakes Basin Explorer, new county-wide data and information will be made available from the Oregon Explorer county pages.
- 3) A Governance Document that would identify the specific roles and responsibilities of the local partners, as well as OSU Libraries and the Institute for Natural Resources in maintaining the portal over the long-term.

A comprehensive budget and expanded work plan for a “Lakes Basin Explorer Phase 2” project will also be developed. It is anticipated that the completion of the “Lakes Basin Explorer Phase 1” will provide demonstration materials and a functional portal that would allow project partners

to raise the additional funds from sources other than OWEB to address a variety of important issues in the basin.

Links to Ongoing Projects

The development of the Lakes Basin Explorer will take advantage of ongoing efforts portal development efforts at INR and OSU Libraries. Of particular relevance are two projects, the development of a Spatial Data Explorer being developed in partnership with the Department of Administrative Services (DAS), and the Wetlands Explorer being developed in partnership with The Wetlands Conservancy (TWC) and the Environmental Protection Agency (EPA). The Spatial Data Explorer Project will provide better and more immediate access to all the framework GIS data for the state and new mapping tools which will be available in all portals. It will be integrated into the national map effort, as funding for the portal is coming from the U.S.G.S., and as will therefore provide more direct and simple access to national map projects.

The Wetlands Explorer project will result in digital information on wetlands around the state, as well as maps and data showing priority wetlands for acquisition and restoration. It includes restoration tools providing councils and landowners information on wetland restoration best practices, seed sources, historic wetland information, and technical assistance. The Wetlands Explorer has particular relevance for the Lakes Basin Explorer because part of a Wetlands Explorer EPA grant involves funding to develop a wetlands conservation plan for the closed basin wetlands in the Warner and Harney Basins, and an assessment of the significance of the desert wetlands in the basin. The wetlands project includes links to ongoing efforts by the U.S. Fish and Wildlife Service to update the management plan for the Malheur Wildlife Refuge, and to determine how different wildlife species, particular waterfowl and shorebirds, use the refuge, with a goal of conserving important wetlands, wetland functions, and bird habitats. By creating the Lakes Basin Explorer, the partners can better share information from the newly developed wetlands assessment, and better involve the local community in decision making and conservation efforts.

Estimated cost: \$51,236 of OWEB costs (\$30,634 of OSU Match, total of \$81,870)

Budget - Lakes Basin Explorer - Phase 1				
	Project Months	Project Cost	OWEB Cost	OSU Match
Salary Costs				
INR Project Salaries	4.00	\$ 24,359	\$ 14,266	\$ 10,093
OSU Libraries Project Salaries	9.00	\$ 36,518	\$ 18,763	\$ 17,756
subtotal - salaries		\$ 60,877	\$ 33,028	\$ 27,849
Service contracts - Web design; science writing; web analytics		\$ 5,000	\$ 5,000	\$ -
Service contracts, Local Partner (eg watershed council) Support		\$ 6,000	\$ 6,000	
OSU Libraries Digital Production Unit Archiving Services		\$ 1,000	\$ 1,000	\$ -
Supplies (training and outreach materials)		\$ 350	\$ 350	\$ -
Travel		\$ 1,200	\$ 1,200	\$ -
Total - direct expenses		\$ 74,427	\$ 46,578	\$ 27,849
OSU Overhead (at 10%)		\$ 7,443	\$ 4,658	\$ 2,785
Total Costs		\$ 81,870	\$ 51,236	\$ 30,634

Component 3: Create Phase 1 of a Deschutes Basin Explorer portal

A significant amount of data, analysis, and information has been generated for the Deschutes Basin, but local groups in the area have informed us that this information is scattered among a number of different websites and database, and is difficult to access and/or navigate. Web sites exist for the Deschutes Basin, but many of them do not provide direct access to digital documents or mapping tools that would support resource decision-making.

Members of the Upper Deschutes Watershed Council, Deschutes River Conservancy, OSU Extension, and the OSU Cascades Campus expressed deep interest in collaborating with OSU Libraries and INR to develop a basin portal for the Deschutes Basin, which includes northern Klamath and Lake counties and most of Wasco, Jefferson, Crook and Deschutes counties.

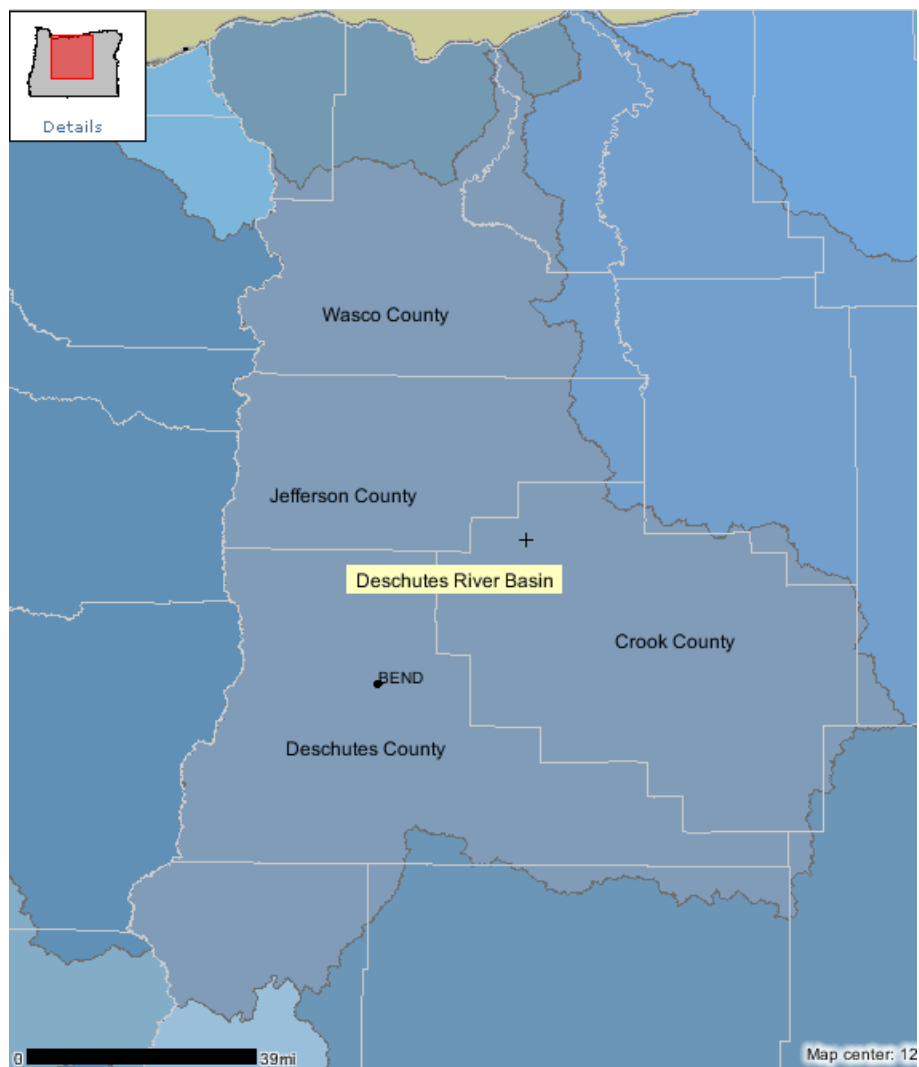


Figure 3. Geographic Extent of Deschutes Basin

The goals of the proposed Deschutes Basin Explorer portal project are to:

1. Provide a single point of electronic, public access to relevant regional scientific, policy and research information for the Deschutes Basin. Initial interest suggests water quality information would be a good place to start;
2. Offer a place to organize, integrate and archive important current and historical documents, data, photos, videos, maps in a digital form that tie to a geographic database; and
3. Highlight one or more high-priority ecosystem restoration issues identified by local groups. Initial interest is in the fish and water issues related to salmon re-introduction in the upper Deschutes River.

Creating a Deschutes Basin portal, the fifth Oregon Explorer basin portal, will allow the Oregon Explorer team to expand information in the issues critical to eastern Oregon, such a wildfire risk reduction treatments, and integrate the considerable work by public agencies, local partners in the Deschutes, the expansive fire learning network, and watershed groups, landowners, management entities, and others.

Deliverables

- 1) Creation and release of the Deschutes Basin Explorer (www.deschutesbasin.info). It will be a web portal and digital natural resources library, with an initial focus on a high priority ecosystem restoration issue within the Deschutes basin.
- 2) Updated Oregon Explorer county pages for Deschutes, Jefferson, Crook, and Wasco Counties. As the basin data and information is compiled and integrated for the Deschutes Basin Explorer, new county-wide data and information will be made available from the Oregon Explorer county pages.
- 3) A governance document that would identify the specific roles and responsibilities of the local partners, as well as OSU Libraries and the Institute for Natural Resources in maintaining the portal over the long-term.

A comprehensive budget and expanded work plan for Phase 2 of the “Deschutes River Basin Explorer” will also be developed. It is anticipated that the completion of Phase 1 will provide demonstration materials and a functional portal that would allow project partners to raise the additional funds from sources other than OWEB to address a variety of important issues in the basin.

Links to Ongoing Projects

The development of the Deschutes Basin Explorer will take advantage of ongoing efforts portal development efforts at INR and OSU Libraries. Of particular relevance are two projects, the development of a Spatial Data Explorer being developed in partnership with the Department of Administrative Services (DAS), and the Wetlands Explorer being developed in partnership with TWC and EPA. The Spatial Data Explorer Project will provide better and more immediate access to all the framework GIS data for the state and new mapping tools which will be available

in all portals. It will be integrated into the national map effort, as funding for the portal is coming from the U.S.G.S., and as will therefore provide more direct and simple access to national map projects. The Wetlands Explorer project will result in digital information on wetlands around the state, as well as maps and data showing priority wetlands for acquisition and restoration, prescreening tools to allow developers and planners to avoid wetlands and endangered species before acquiring a parcel or spending money on project planning, and restoration tools providing councils and landowners information on wetland restoration best practices, seed sources, historic wetland information, and technical assistance. The efforts by partners in the Deschutes Basin to protect the important and threatened wetlands along the Little Deschutes River can be highlighted.

In addition to these two projects, all of the existing subject matter portal data will be available on the site. Access to Deschutes Basin specific fire risk data from the Fire Risk Explorer, wildlife data from the Wildlife Explorer, and land use and measure 49 data from the Land Use Explorer will be provided. Lastly, the ongoing work to further the implementation of the Conservation Registry (<http://conservationregistry.org>), to integrate it into the Oregon Explorer, and to link it to newly developed OWEB Watershed Restoration Inventory (OWRI) tools will be particularly important because of OWEB’s Special Investment Partnership (SIP) in the Deschutes. The Deschutes SIP will expand the number of restoration projects in the basin, and the speed of their implementation. The Deschutes Basin Explorer will provide tools for keeping folks in the basin up to speed on what is happening with the Deschutes SIP, and for sharing information about it.

Estimated cost: \$52,743 of OWEB costs (\$25,571 OSU Match, total of \$78,314)

Budget - Deschutes Basin Explorer - Phase 1				
Salary Expenses	Project Months	Project Cost	OWEB Cost	OSU Match
OSU Libraries Staff Costs	9.00	\$ 36,898	\$ 19,588	\$ 17,310
INR Staff Costs	3.25	\$ 21,146	\$ 15,210	\$ 5,937
subtotal - salaries	12.3	\$ 58,045	\$ 34,798	\$ 23,247
Service contracts - Web design, science writing, web analytics		\$ 5,000	\$ 5,000	\$ -
Service contracts - Local Support (watershed council, local groups)		\$ 6,000	\$ 6,000	
OSU Libraries Digital Production Unit Archiving Services		\$ 1,000	\$ 1,000	\$ -
Supplies (training and outreach materials)		\$ 350	\$ 350	\$ -
Travel		\$ 800	\$ 800	\$ -
Total - direct expenses		\$ 71,195	\$ 47,948	\$ 23,247
OSU Overhead (at 10%)		\$ 7,119	\$ 4,795	\$ 2,325
Total Costs		\$ 78,314	\$ 52,743	\$ 25,571

Component 4: Scope and create a prototype for a Spatially Based Data Management System for Oregon Plan related data and information.

The Oregon Explorer team proposes to create a prototype web tool to display and manage Oregon Plan related data and information. This functionality would improve OWEB's ability to manage data in a spatially relevant way. It would use visualization tools created during the OWEB Phase 1 project for the OWRI as a foundation for making other Oregon Plan related information available in an easy-to-understand way. This approach will inform data management for and annual reporting on Key Performance Measures by OWEB and other natural resources agencies. The initial focus will be on monitoring data collected by the many Oregon Plan partners, particularly data needed for state or national reporting projects.

Tasks and Deliverables

Specific tasks included in this component are:

1. Prototyping a spatially based data management system through the creation of a tool that shows the location of monitoring projects underway by Oregon Plan partners. Methodology if possible involve tapping into existing databases, such as the PNAMP pilot effort to conduct an aquatic monitoring inventory (see <http://www.pnamp.org/web/Content.cfm?SectionID=9#PNAMP>), and supplement this information with monitoring projects that may have been overlooked by other database compilations that are important to the Oregon Plan; and
2. Integrating with the in-development Spatial Data Explorer (a partnership between the Oregon Geospatial Enterprise Office and the Explorer Program) to demonstrate access to an Oregon Plan related framework data layer (i.e., Anadromous Fish Distribution [very high priority per Oregon Framework Implementation Team] or Fish Passage Barriers [high priority]). The intent of the Spatial Data Explorer is to make comprehensive, statewide data accessible via the Internet. The deliverable from this task will be accessible natural-resources data that is of importance to local restoration groups and Oregon Plan partner agencies.

This work will help address information needs that OWEB and other agencies have related to reporting annually on Key Performance Measures (KPMs). Data are currently collected and stored in ways that make it difficult for agencies to access and share information about KPMs. A prototype of a spatially based data management system would demonstrate the potential for data sharing and improved reporting efficiency among agencies.

Estimated cost: \$23,112 of OWEB costs (\$8,585 OSU Match, Total of \$31,696).

Budget - Oregon Plan Data Web Tool and Viewer				
Name	Project Months	Project Cost	OWEB Cost	OSU Match
OSU Staff Costs	5.00	\$ 19,252	\$ 14,431	\$ 4,820
INR Staff Costs	1.50	\$ 9,363	\$ 6,379	\$ 2,984
subtotal - salaries		\$ 28,615	\$ 14,431	\$ 4,820
Travel		\$ 200	\$ 200	\$ -
Total - direct expenses		\$ 28,815	\$ 14,631	\$ 4,820
OSU Overhead (at 10%)		\$ 2,881	\$ 1,463	\$ 482
Total Costs		\$ 31,696	\$ 16,095	\$ 5,302

3.0 Total Project Estimated Budget

Total Costs for Oregon Explorer Phase 2 Proposal			
Project	Total Cost	OWEB Funds	OSU Match
1) OWRI Products and Visualization Tool	\$33,353	\$25,237	\$8,116
2) Lakes Basin Explorer Portal - phase 1	\$81,870	\$51,236	\$30,634
3) Deschutes Basin Explorer Portal - phase 1	\$78,314	\$52,743	\$25,571
4) Spatially Based Data Management System Prototype	\$31,696	\$23,112	\$8,585
Total Costs	\$225,233	\$152,328	\$72,906
Cost Breakdown by OWEB Category			
Cost Breakdown by OWEB Category	Total Cost	OWEB Funds	OSU Match
Project Management	\$34,238	\$29,516	\$4,722
In-House Personnel	\$147,420	\$85,864	\$61,556
Contracted Services	\$20,000	\$20,000	\$0
Travel	\$2,400	\$2,400	\$0
Supplies and Materials	\$700	\$700	\$0
Equipment	\$0	\$0	\$0
Fiscal Administration (overhead at 10%)	\$20,476	\$13,848	\$6,628

The total OSU Libraries – INR match is 32.4%.

4.0 Plan for Evaluating Usage of Oregon Explorer

To help evaluate the success of the OSU Explorer Web site, OSU Libraries will continue to track use of sites in the Explorer series using Urchin 5 software from Google Analytics. This software analyzes traffic for Web sites and provides accurate and easy-to-understand reports about usage.

In December 2007, INR submitted a Project Completion Report to OWEB for the Oregon Explorer Web site. This report described how extensively the Explorer sites were being used between January 2007 and December 2007. (The Launch of Oregon Explorer was 6/28/07.) At that time we saw a steady increase in usage. Since then we have noticed that the North Coast Explorer has not experienced the same increase in usage, except for a recent increase in April 2008. Based on this trend information, we realize that the North Coast Explorer may be less useful because of a lack of local stewardship as compared to the Umpqua Basin Explorer. The Umpqua Basin Explorer has become more relevant because of local involvement. This information is being used as we plan to expand the site to include the Deschutes Basin and the Lakes Basin.

In May 2008, the following usage statistics were presented at the OWEB Board Meeting:

Number of Sessions per Month (note: a session here is a visit involving site interaction ending either following 30 minutes of inactivity or by a move to another site)

- OE: Steady increase from ~3,000 sessions/mo. in April 2007 to ~28,000 sessions/month in April 2008
- WBE: Steady use of between 2,000 and 4000 sessions/month since April 2007 with recent increases to 12,000-15,000 sessions/month in March and April 2008
- UBE: Steady use of between 2,000 and 3,000 sessions/month since May 2007
- NCE: Fairly steady use of between 3,000 and 5,000 sessions/month since April 2007, with a recent increase to 9,000 sessions/mo. in April 2008

OSU Libraries will continue to use the Urchin 5 software to track use of OE in the coming months and will report to OWEB about use statistics on an annual basis.

5.0 Project Timeframe

Estimated timeframe to complete all projects: 18 months, preferably beginning October 1, 2008 and ending on March 31, 2010.

Appendix 1. Funding Sources for Oregon Explorer Development as of 6/30/2008

I. Past Funding : \$1,490,498

OSU Libraries/INR (32%)	\$483,356	Willamette Basin Explorer North Coast Explorer
Other State Funds (42%)		
Oregon Watershed Enhancement Board	\$312,500	North Coast Explorer Willamette Basin Explorer Umpqua Basin Explorer Phase 2 Oregon Explorer Phase 1
Oregon Dept. Forestry	\$ 43,500	Wildfire Risk Explorer
Oregon Dept. of Fish and Wildlife	\$ 40,217	Wildlife Explorer; Conservation Registry
Oregon Dept. Administrative Services	\$225,596	Imagery Explorer Oregon Explorer Phase 1
Foundation Grants (24%)		
Meyer Memorial Trust	\$180,000	Willamette Basin Explorer
Oregon Community Foundation	\$175,329	Land Use Explorer
Local/Federal Funds (2%)	\$ 30,000	Umpqua Basin Explorer Phase 1
<u>II. Current Funding: \$556,833</u>		
OSU Libraries/INR (12%)	\$ 74,956	Oregon Explorer Phase 2 Rural Communities Explorer Phase 1
Foundation Grants (55%)		
The Ford Family Foundation	\$ 24,988	Rural Communities Explorer Phase 1
Murdock Foundation	\$284,000	Wetlands Explorer
State Funds (25%)		
Department of Administrative Services	\$ 49,854	Spatial Data Explorer Phase 1
Dept. of Land Conservation & Development	\$ 20,000	Measure 49 Tool
Oregon Dept. of Environmental Quality	\$ 70,258	Water Quality Data Submission Tool
Local/Federal Funds (5%)	\$ 30,000	Umpqua Basin Explorer Phase 3
CICEET	\$ 11,133	Stormwater Assessment Tool
Environmental Protection Agency	\$150,000	Wetland Explorer & Tools
<u>III. Proposed Funding:\$1,068,000</u>		
State Funds (98%)		
Department of Administrative Services	\$45,000	Hazards Explorer
Oregon Watershed Enhancement Board	\$150,000	Oregon Explorer Phase 2
Governor's Budget	\$150,000	Urban and Rural Connected POP
	\$500,000	OUS Research Council POP –(OE)
Governor's Budget (reintroduce in 2009)	\$200,000	Sustainable Ag Explorer POP
Co-sponsored projects (2%)		
Oregon Forest Resources Institute	\$19,374	Oregon Explorer for Teachers

I. Total Past Funding: \$1,482,142

II. Current Funding: \$706,833

III. Total Funding to date (6/30/2008): \$2,127,073

IV. Total Funding Breakdown:

Private Foundations	\$ 664,317	31.2%
State	\$1,241,623	58.5%
OWEB	\$ 312,500	14.7%
DAS	\$ 275,450	13.0%
OSU – INR	\$ 549,956	25.9%
Other State	\$ 103,717	4.9%
Federal	\$ 221,133	10.4%