Appendix 2-A: Willamette Basin Explorer Website Information Architecture

We worked with potential users to define the key requirements of the web site. From these key requirements, we formed the main or first level navigation choices. This navigation component is present on all site pages except for the mapping and statistics tools that open in their own windows. With this design, users are only one click away from required content.

Figure 1. Main navigation menu.

Explanation of Main Navigation Subsections

Willamette Stories

The Willamette Stories section of the web site uses stories or narratives to inform users what are the important natural resource issues in the region, what others are doing in the area to benefit natural resources, and how they can get involved. We have started with one story, *The Willamette Story*, and are working with partners to define and create additional stories. By providing a context to the site content, we hope to make visitors excited about the site. Because of the important role the stories play in introducing the site, we have highlighted *The Willamette Story* on the home page of the site.

THE WILLAMETTE STORY
Feature Article

This short story, told with voices and images, offers a broad overview of the where we have come from and where we might be going as citizens of the Willamette Valley. From settler descriptions of the fertile valley they found in 1854 to modern dairy farmers trying to protect their farms from urban sprawl, the story offers a wide range of opinions from planners, farmers, scientists, and more. As an introduction to the Willamette River Basin Planning Atlas, it gives examples of how the valley might look in 2050 in terms of urban development, agriculture, forestry, and wildlife. If you think your decisions can make a difference in the quality of life for everyone in the Valley, this story is for you.

Scenes from the Willamette Story multimedia presentation

⇢ Launch The Willamette Story
(Requires the Flash 6 Plug-in)

Figure 2. Highlighting the Willamette Story on the home page.

Critical Issues

Users can quickly survey the critical issues facing the Willamette River Basin through this link. Each link takes the user to an introductory story often with links to further information.

Critical Issues:

⇢ Future Scenarios
⇢ Habitats
⇢ Conservation and Restoration Opportunities
⇢ Aquatic Life
⇢ Oregon Land Use Laws
⇢ Agriculture
⇢ Water Availability
⇢ Floodplain Restoration
⇢ Dams and Revetments
⇢ Invasive Species

Future Scenarios
We present three scenarios for what the Willamette Basin might be like in the year 2050, chosen to depict a plausible range of alternatives as defined by representative citizens of the Basin.

Habitats
In recent years, a deeper understanding of our impact on the landscape has prompted a recognition of how habitat benefits both people and wildlife. This section offers and overview of the primary habitats found in the Basin.

Conservation and Restoration Opportunities
How do we prioritize conservation and restoration opportunities?

Aquatic Life
The health of the Basin's rivers and streams are indicators of overall ecosystem health. What are the components of healthy aquatic ecosystems?

Oregon Land Use Laws
How do land use laws protect valuable soil for agriculture and offer many benefits to urban citizens as well?

Figure 3. Introduction to the critical issues pages.

AGRICULTURE

Changes in agricultural practices are fundamental to the health of the Basin's economy and ecosystems.

In 1824, the Hudson's Bay Company established Ft. Vancouver. The Fort, in an effort to be self-sustaining, commenced farming operations that included the planting of grain and orchards, and raising sheep and cattle. Within a year of its establishment, supplies of seed corn, barley, oats, peas, potatoes, and wheat arrived. Pigs, chickens, and other livestock had come in by land from other Hudson's Bay posts, or by sea from California. On Sauvie Island, a complex of dairies was created to supply needed milk, butter, and cheese. As Hudson's Bay employees retired, land was given to them to farm, especially in the French Prairie area of the Willamette Basin.

Figure 4. Content from the agriculture critical issue section.

Actions and Assistance

After providing site visitors with an understanding of the issues facing the basin through the Willamette Stories and Critical Issues sections, we use the Actions and Assistance area of the web site to provide site visitors with resources to help them make better decisions regarding land and water resources.

ACTIONS AND ASSISTANCE

If you are concerned about the future of the Willamette River Basin and want to make better decisions concerning the basin's land and water resources, there are many actions you can take as a homeowner, landowner, or policy maker and many places to get help.

What Can I Do?
The collective positive actions of homeowners can make a significant difference in the larger landscape while improving their home environments.

Where to Get Help
Look here for contact information for agencies that deal with natural resource issues, for conservation incentive program information, and for permit information for watershed-related activities.

Recommendations for Conserving and Restoring Fish and Wildlife Habitat
Eleven recommendations for preserving the integrity of our natural systems while accommodating growth in the Willamette River Basin over the next fifty years.

Figure 5. Content from Actions and Assistance section.

About this Site

We use the about this site section to provide a short explanation of why the site exists, who funded it, who created it, and the partnerships involved.

Map and Report Tools

Much of the important data concerning the natural resources of the Willamette River Basin are spatial data, or data that can be mapped. The Map and Report Tools section allows users to view live maps of selected spatial data and to create summary reports of spatial data attributes (e.g. property ownership). Our previous user testing has shown that commonly implemented web-based mapping tool interfaces are too complicated to those new to maps and geographic information systems (GIS). We have taken several steps to make the mapping section useful to users. First, we develop pre-built maps. A pre-built map is a combination of specific data layers to illustrate a single issue. By using pre-built maps, we avoid showing the user a simple starting map (i.e. an outline of the Willamette River Basin) and forcing them to turn on map layers to get a useful map. Second, we have created two map tool interfaces, the mapping tool wizard and the advanced view map tool. We designed the mapping tool wizard for those new to web mapping and GIS and the advanced view mapping tool for those familiar with basic GIS mapping techniques.

Select map type:

Future Scenarios
Conservation & Restoration Opportunities
Flood Plain Restoration
Historic Floods
Future Scenarios
Conservation Trend
Development Trend
Plan Trend
Water Quality

Figure 6. Selecting pre-built maps.

The mapping tool wizard requires three steps. First, users select what to map. We have made a selection of maps relating to the key issues of the Willamette River Basin. Second, users choose where they want the map centered. They can enter an address or a place name like a city or town name. Once the users have selected what and where to map, they get a "live" map. With the "live" map, they can zoom in and out, turn on and off map layers, and identify map features. They can also print or email a map.

The advanced view map tool allows users to create maps using all available data layers and make use of an advanced GIS tool set.
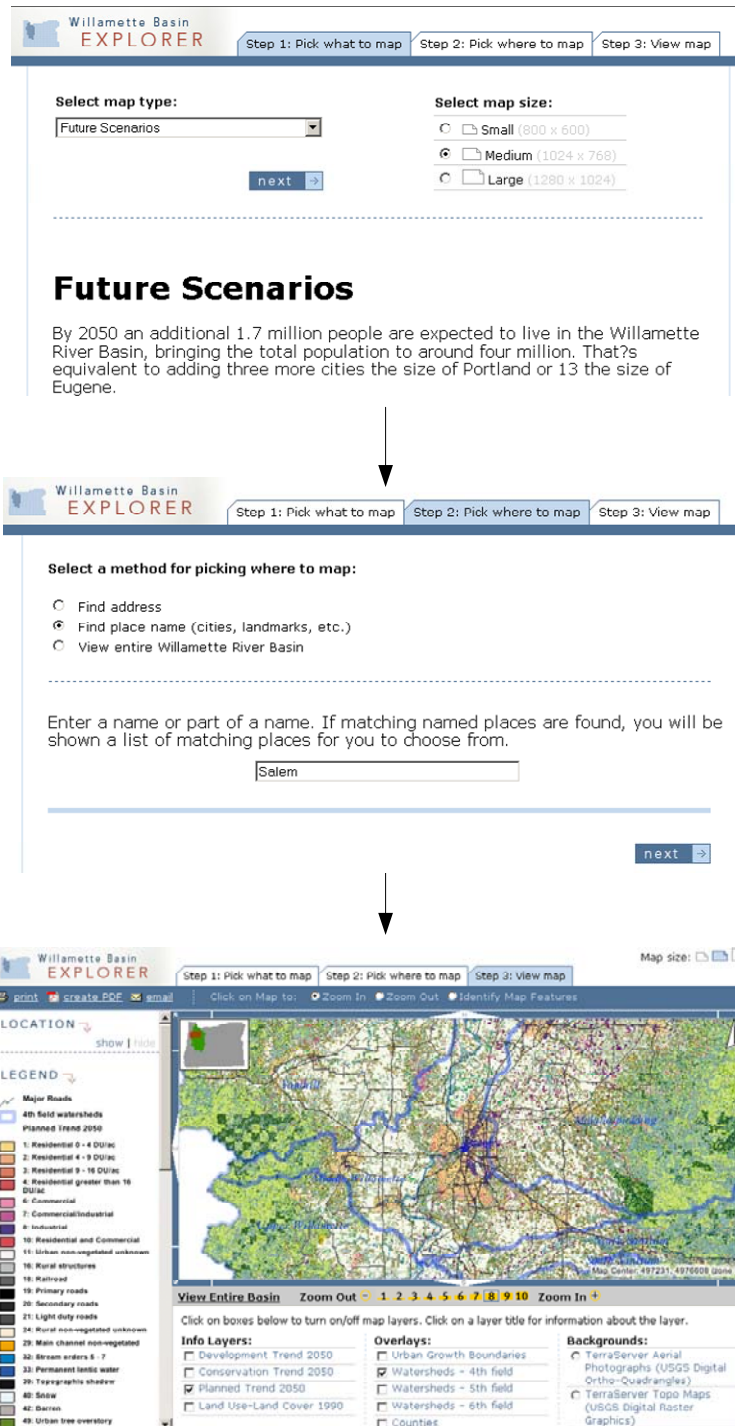
Figure 7. The three-step mapping tool wizard.

The statistics wizard enables users to create graphs and tables of key spatial data attributes. Similar to the mapping tool wizard, the statistics wizard requires three steps. You first pick a statistic such as conservation restoration opportunities. Next, you pick where to compute the statistic. You can choose from 4th field watersheds through 6th field watersheds, counties, and urban growth boundaries in the Willamette River Basin. Finally, you can view your custom statistical report as a graph or a bar chart.
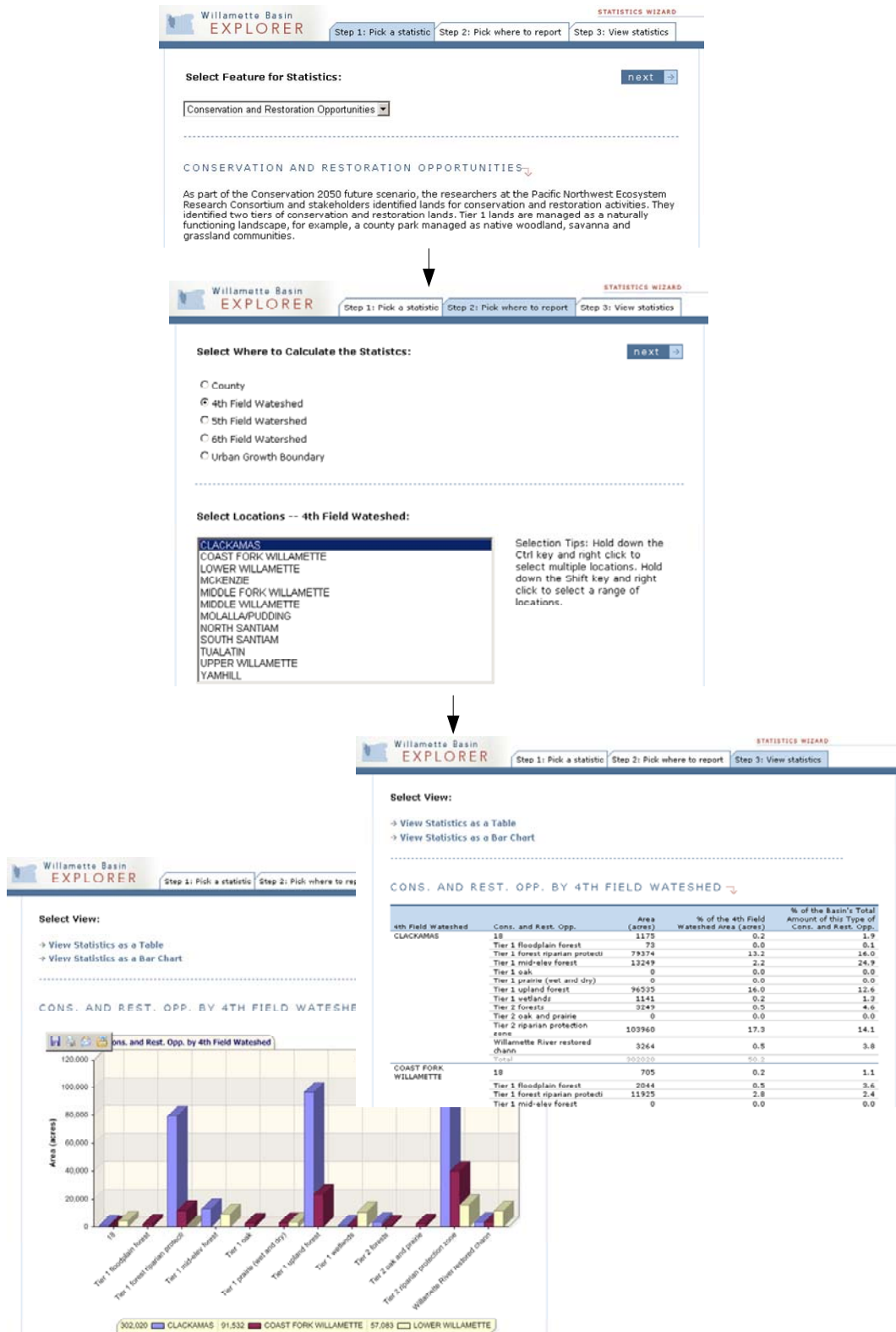
Figure 8. The three-step statistics wizard.

Publications

Users can browse through all reports and publications within the site. The reports and publications listing provides the document title, source, publishing date, format (e.g. pdf), and size.

Figure 9. Sample publications content.

Geospatial Data Collections

To avoid duplicating existing databases of data, users of the geospatial data collections section will find links to air and water quality monitoring data web sites, data clearinghouses, and metadata search sites as well as links to individual data sets through the general watershed information sub-category.

Figure 10. Introductory material from the geospatial data collections section of the web site.

Photos and Videos

Users can access videos created by the Pacific Northwest Ecosystem Research Consortium and several online photograph collections featuring historic images of the Willamette River Basin.

Figure 11. Sample content from the photos and videos section of the web site.

People and Expertise

Helping users find appropriate expertise is one of the key principles of the Willamette Basin Explorer. To provide such ability, we created listings of land trusts, soil and water conservation districts, watershed councils, and other people and organizations providing expertise.

Figure 12. Sample content from the people and expertise page.

Additional Resources

The additional resources section of the site provides users links to other peer-reviewed web sites.

Figure 13. Sample content from the additional resources page.

Search
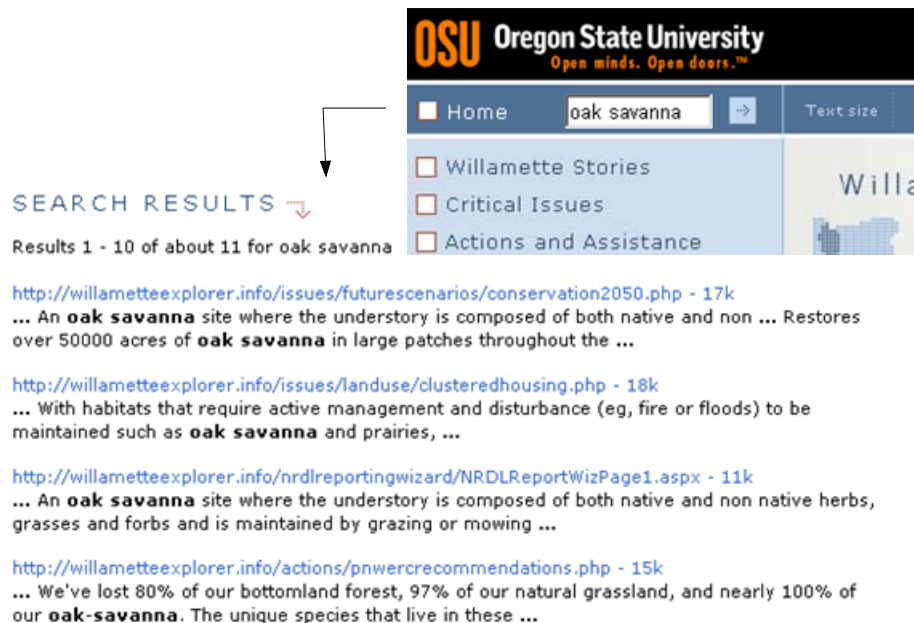
Users can access a Google-like search box on every page.

Figure 14. Illustration of key word searching.