

The Nature Conservancy Willamette Basin Synthesis Project

The Nature Conservancy's (TNC's) Willamette Basin Synthesis Project (WBSP) combined five maps, each consisting of priority terrestrial and freshwater sites identified by a different conservation planning effort in the Willamette Valley, to produce a "Union Portfolio" of Conservation Opportunity Areas (COAs). After defining COA boundaries based on a variety of existing datasets (e.g., rare species data), TNC further refined boundaries based on recommendations from the public regarding the modification, addition, or removal of COAs (the "nomination" process). The public delineated changes to the map using an online mapping tool, developed by TNC, in which features could be drawn over the preliminary map to indicate which areas should be added or changed to benefit conservation in the region. The approach is particularly transferable to areas in which the need to prioritize for ecological viability must be balanced with constraints in terms of the size of areas that can be acquired due to high land costs and fragmentation. For this reason, the WBSP provides a model approach for identifying wetland restoration or protection opportunities that enhance habitat connectivity in urban areas.

OVERVIEW

Lead developer(s): The Nature Conservancy.¹

Year developed: 2012 (ongoing).²

Geographic area: The Willamette Valley (Fig. 1).¹

Aquatic resource types: Freshwater wetlands.¹

Restoration/conservation: Wetland restoration, preservation, and acquisition.²

Stakeholders: Oregon Department of Fish and Wildlife, TNC, The Wetlands Conservancy, the Willamette Partnership, Oregon Parks and Recreation Department, Defenders of Wildlife, Oregon Natural Heritage Information Center, Oregon Department of Environmental Quality, METRO, Natural Resource Conservation Service (NRCS), Bonneville Power Administration (BPA), United States Forest Service, Oregon Watershed Enhancement Board (OWEB), the general public.²

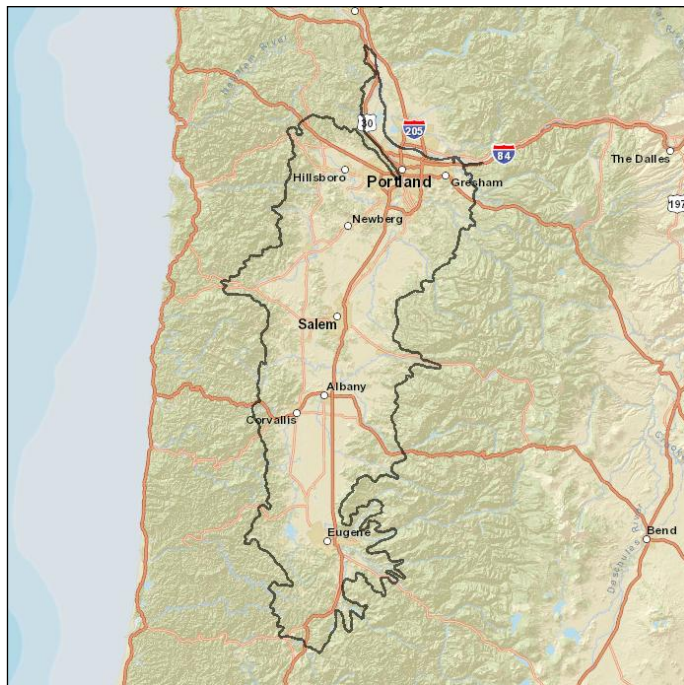


Figure 1. The Willamette Basin Synthesis Project identified priority areas for freshwater wetland restoration and conservation in the Willamette Valley, Oregon. Used with permission of The Nature Conservancy.

Current status: TNC is currently in the process of updating its Willamette Valley Synthesis Map; recently reconvened its steering committee to revise the map based on additions and

deletions to the map contributed by the public as part of the nomination process (see below). Priority Conservation Opportunity Areas (COAs) identified by the map are currently used as a filter by several agencies/organizations to identify sites representing the best investment opportunities for wetland restoration and protection.²

PRIORITIZATION ANALYSIS

Landscape prioritization tool(s):

Willamette Valley Synthesis Map: TNC combined five maps produced by five different conservation planning efforts identifying priority terrestrial and freshwater sites for the Willamette Valley (Table 1) to generate a “Union Portfolio” of Conservation Opportunity Areas (COAs) (Figure 2).³ TNC further defined boundaries for each COA using 2005 imagery and current GIS data for rare species, vegetation, soils, ownership/management, land use, and zoning. TNC then compiled a list of discrepancies in the map in which areas of contradictory attributes overlapped. The discrepancies were reconciled in TNC-facilitated workshops with the help of a steering committee composed of state and federal agencies. During these workshops, TNC visualized the map as well as supplementary data layers (e.g., aerial imagery, soils, land use, etc.) in ArcGIS for committee members. As the committee evaluated and reconciled discrepancies one-by-one, TNC re-digitized the map so that modifications were integrated in real time. Overall, TNC’s role was limited to managing the development of the Synthesis Map and TNC did not consider itself to be a primary decisionmaker regarding COAs included in the map. By instead emphasizing a process for delineating COAs using a collaborative decisionmaking process involving a variety of state and federal agencies, TNC ensured that stakeholders had adequate buy-in.²

The Willamette Basin Synthesis Project is very similar to TNC’s broader Ecoregional Assessment process, differing in two ways:²

- 1) The WBSP went to great lengths to ensure that its Synthesis Map would not be viewed solely as a TNC product. In contrast, final COAs identified in Ecoregional Assessments are decided by TNC alone.
- 2) Because the Willamette Valley is highly converted, with about 70% land conversion within the Valley, TNC wanted to ensure that the COAs it defined were smaller than they would normally be defined using a typical Ecoregional Assessment. Land is expensive in the Willamette Valley, with less than three percent in permanent conservation, so defining large swaths as COAs would not have been appropriate. TNC needed to identify COAs that had high ecological integrity but a small footprint.

*Prioritization objectives assessed:*²

- Habitat quality
- Feasibility of restoration

Table 1. TNC’s Willamette Valley Synthesis Map combined five Union Portfolio base maps, with further refinement of boundaries using various data factors.^{2,4}

Factor used in analysis	Data source(s)
<i>Union Portfolio base maps</i>	

Willamette Valley Ecoregional Assessment	TNC
Willamette River Basins Alternative Futures Project	Pacific Northwest Ecosystem Research Consortium
Oregon Conservation Strategy	ODFW
Priority Wetlands	The Wetlands Conservancy
Oregon Biodiversity Project	N/A
<i>Boundary refinement factors</i>	
Rare species	ReGAP data
Vegetation	State Parks Vegetation data
Soils	N/A
Ownership/management	N/A
Land use	NLCD 2001
Zoning	N/A

Input data QA/QC: TNC completed field surveys to ensure that the input data layers used to develop the Willamette Valley Synthesis Map were correct. In some cases, because data used in its analysis could not be accurately classified using remote sensing (e.g., aerial imagery), TNC had to rely on field verification to obtain accurate data inputs.²

Validation of the landscape prioritization tool(s): TNC field verified COAs located in areas with which TNC staff was not very familiar to ensure that they had been accurately delineated.²

Refinement of landscape prioritization priorities: TNC used a “nomination” process to incorporate recommendations from the public regarding the modification, addition, or removal of COAs in the Synthesis Map using a nomination form and online mapping site. Using this mapping website, members of the public could draw features over the Union Portfolio to indicate which areas should be added or changed and print the resulting modifications as a PDF (Fig. 3). Contributors were instructed to make changes that furthered the recovery of listed species or protected habitat for the Oregon Conservation Strategy, addressed multiple conservation values, or improved ecosystem functions that benefit people.²

Prioritization products: The Willamette Valley Synthesis Map, shown in Figure 2, can be visualized using an online interactive mapping tool available at: http://maps.tnc.org/WV_Synthesis_COAs/. This online tool, which uses basic Google maps, has helped TNC to be highly effective in communicating priority areas identified by the Willamette Valley Synthesis Map to the public. In contrast, TNC typically documents the COAs it identifies using CDs or in hard-bound reports, formats that are much less accessible to the public.²

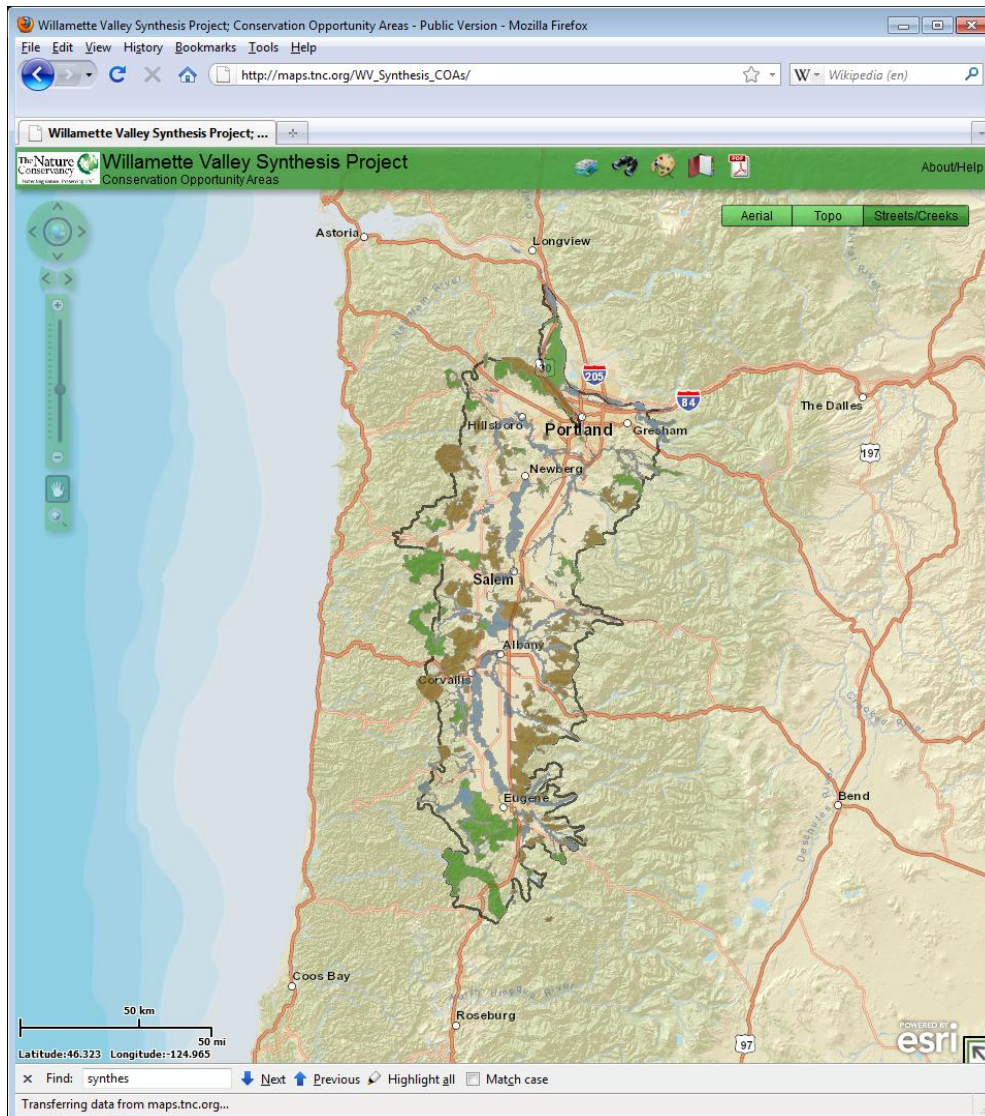


Figure 2. The Willamette Valley Synthesis Map identified Conservation Opportunity Areas for potential restoration and conservation projects. Both terrestrial (green and brown) and freshwater (blue, light blue, and gray) sites are represented in the portfolio. Used with permission of The Nature Conservancy.

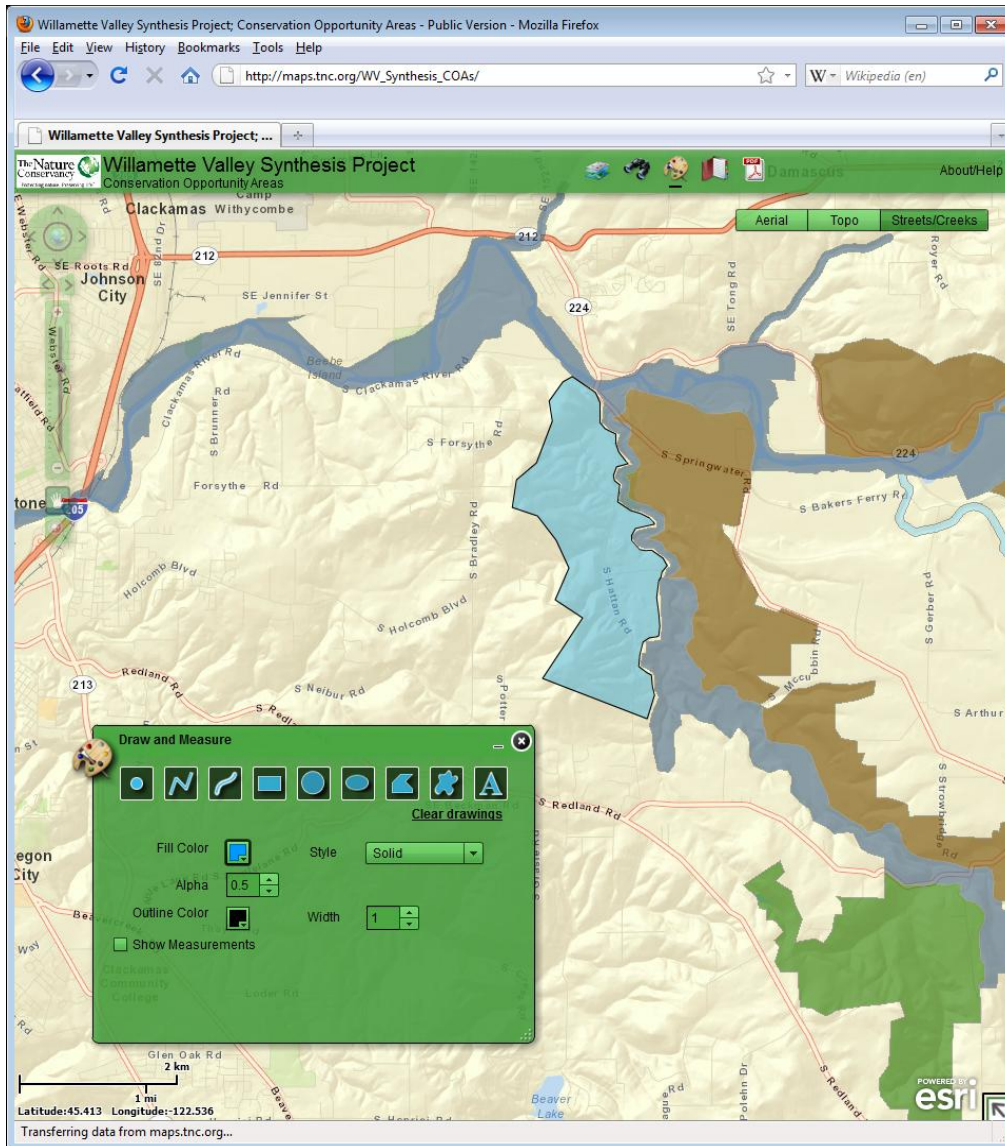


Figure 3. Using the WVSP online mapping tool, members of the public can draw recommended additions or changes to COAs identified in TNC’s Union Portfolio. Members of the public can then print changes as a PDF for submission to TNC for incorporation into the Union Portfolio. Used with permission of The Nature Conservancy.

IMPLEMENTATION

Regulatory/non-regulatory programs:

- Compensatory mitigation requirements under the Northwest Power Act: The map is used to guide the selection of mitigation sites by the Bonneville Power Administration, which has large mitigation obligations due to dam operations. Over the next 15 years, BPA will spend \$125 million for land protection to meet mitigation obligations.²
- Willamette Partnership Ecosystem Marketplace: The Willamette Partnership uses the Basin Synthesis Project map as part of its Ecosystem Marketplace program to adjust mitigation ratios for mitigation/impact sites located within priority areas. The Partnership awards more credits for mitigation projects located within priority areas and requires that more credits be purchased to compensate for impacts within these areas.⁵
- The NRCS Wetland Reserve Program only pursues easements that are located within Conservation Opportunity Areas identified by the Willamette Valley Synthesis Map. The absolute deference placed by NRCS in the map contrasts with the use of the map by other funders, who will sometimes fund exceptional projects not identified in the map.²
- The OWEB Small Grant Program: The map is used to guide the distribution of funding for wetland restoration projects by private landowners under the OWEB Small Grant Program. This grant program is one of the largest state-funded grant programs for wetland restoration in Oregon, with funds derived from a portion of lottery dollars awarded out on a competitive grant basis.²
- Most entities that fund restoration, preservation, and acquisition in the Willamette Valley use the Willamette Valley Synthesis Map as a filter for selecting sites to fund. At least 75% percent of public funding for acquisition/restoration in the Willamette Valley is allocated to sites located within the COAs identified in the map.²

Transferability:

- The approach is especially transferable to areas with large populations in which the need to prioritize areas for ecological viability must be balanced with constraints in terms of the size of areas that can be acquired. This is particularly true in Oregon where land use laws confine urban areas and delineate urban growth boundaries. For this reason, the WBSM provides a model approach for identifying opportunities for restoration that enhance overall connectivity within these urban areas.²

Data gaps:

- Data for designated critical habitat initially represented a data gap but these data were since acquired. Remaining data gaps involve data resolution (e.g., obtaining data at the tract level). However, regardless of improvements in data resolution, the planning tool will continue to remain very coarse and will never replace the need for thorough evaluation of lands identified as priorities using the tool.²

Barriers (other than data):

- Property rights concerns: TNC is concerned about the misconception among the general public, particularly agriculturalists, that the goal of developing the map is to remove

lands from production. For TNC, this misconception is the single largest barrier to implementation of the tool. In fact, TNC would like only to target restoration and preservation activities on just a third of the 1.2 million acres identified in the map. Due to this concern, the committee that initially delineated COA boundaries carefully considered the amount of agricultural land included in the maps during the map's development.²

Future goals:

- Complete another update of the WBSP in five years that continues to incorporate high-quality data and stakeholder input to ensure that the map remains useful to stakeholders so that they are not compelled to develop a new/different map. TNC would like the WBSP to undertake a periodic update and review process every five years, depending on the emergence of new and updated datasets.²
- Going forward, TNC cited a need to continue dedicating substantial time, money, and staff resources to the process of securing high-quality stakeholder buy-in. The tool has been successful at convincing NRCS and others to direct funding to areas identified in the map because TNC actively advocated for the tool with engaged stakeholders in the criteria development process.²
- After completing the current update, TNC would like the map to be used as the basis of identifying priority habitat areas in the Willamette Valley for the Oregon State Wildlife Action Plan. Using the Willamette Valley Synthesis Map to direct the allocation of funding from the state wildlife agencies would represent another step in TNC's broader effort to use the WBSP to unify wetland restoration and protection efforts in the Willamette Valley.²

¹ The Nature Conservancy. Webinar: "Willamette Basin Synthesis Project." Accessed from: http://www.dfw.state.or.us/conservationstrategy/docs/pac_nw_wl_connections_ws_102008/Willamette%20Basin%20OSynthesis%20Project.pdf.

² Interview on 5/22/2012 with Dan Bell, Willamette Basin Conservation Director, The Nature Conservancy.

³ TNC intended to use a sixth layer, Critical Habitat Designations and Recovery Plans for Willamette Valley fish and endemics, as part of its Union Portfolio but this layer was not available at the time. However, USFWS has since completed recovery plans delineating critical habitat for prairie plant species and one endemic butterfly.²

⁴ Jimmy Kagan. Webinar presented April 28, 2010. National Data for Endangered Species, Wetlands, and Ecosystem Services: Using transportation funding to create new types of "basic heritage data."

⁵ Email received on 3/22/12 from Bobby Cochran, Executive Director, Willamette Partnership.