

# OakQuest: Collaborative mapping and stewardship of Oregon white oak

T. Labbe<sup>1</sup>, L. Hennings<sup>2</sup>, J. Soll<sup>2</sup>, S. Jackson<sup>3</sup>, S. Breck<sup>3</sup>, and N. McConville<sup>3</sup>

<sup>1</sup> Kingfisher Ecological Services LLC, Portland OR, 503-758-9562 [ted.labbe@gmail.com](mailto:ted.labbe@gmail.com)

<sup>2</sup> Metro, Portland OR, 503-797-1940 [lri.hennings@oregonmetro.gov](mailto:lri.hennings@oregonmetro.gov)

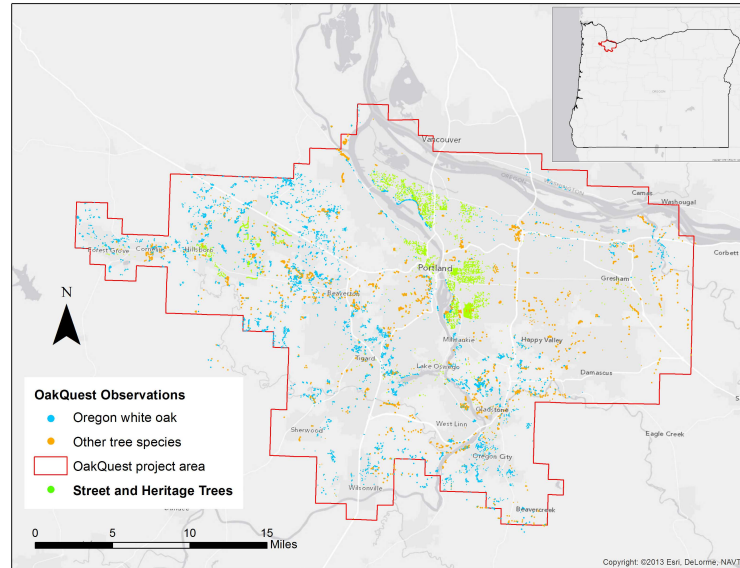
<sup>3</sup> Native American Youth and Family Center, Portland, OR

## Introduction

- The Intertwine Alliance Portland-Vancouver Regional Conservation Strategy (2012) and Oregon Conservation Strategy (2006) identify mapping and stewardship of Oregon white oak (*Quercus garryana*) habitats as key priorities.
- Native oak habitats harbor high numbers of imperiled flora and fauna, and because of their geography are threatened disproportionately by ongoing development, agriculture, and wildfire suppression.
- Existing oak maps are incomplete. The lack of high quality oak distribution maps hinders local conservation efforts and leaves a gap in one of the most rapidly developing areas within the ecosystem's range from northern California to southwestern British Columbia.
- The Intertwine Alliance's Oak Mapping Work Group (OMWG, Table 1) is a multi-partner effort developing a comprehensive map of Oregon white oak habitats for the greater Portland metropolitan region.
- Since 2011, the OMWG has forged partnerships, defined a shared work program, leveraged limited resources, and created a draft remote sensing oak model.
- In summer 2014, OMWG partners planned and implemented a successful oak mapping citizen science effort - "OakQuest" - to collect field observations that are being used to train a remote sensing model predicting regional oak distribution.

## Methods

- In spring 2014, 80+ citizen volunteers were recruited and trained in Oregon white oak ecology, conservation, and field mapping techniques.
- A custom Fulcrum smartphone application ([www.fulcrumapp.com](http://www.fulcrumapp.com)) was developed and deployed to teams of 2-4 volunteers who mapped Oregon white oak trees and stands across the region during July-mid September 2014. Volunteers captured all photos and notes within the smartphone application, which enabled teams to see a live-update of all observations.
- During October 2014, OMWG natural resource professionals collected supplemental observations of other tree species, which we integrated with existing inventories of street and heritage trees to help train the remote sensing model predicting Oregon white oak distribution.
- We assessed volunteer experiences with a post-effort anonymous online survey that was directed at both active participants as well as individuals who expressed an interest but were not able to participate.
- To help oversee and coordinate OakQuest, we hired, trained and mentored two college-age Native American youth in GIS/GPS technologies, volunteer management, and oak ecology/conservation.



**Table 1. The Intertwine Alliance Oak Mapping Workgroup Partners**

Audubon Society of Portland	Metro Regional Government
City of Portland, Bureau of Environmental Services	Native American Youth and Family Center
City of Portland, Bureau of Parks and Recreation	Neighbors for a Livable West Linn
Clackamas Soil and Water Conservation District	North Clackamas Park and Recreation District
Conservation Biology Institute	Oregon Department of Fish and Wildlife
East Multnomah Soil and Water Conservation District	Oregon Department of Forestry
Ed Alverson Consulting	Portland State University, Indigenous Nations Studies
Forest Park Neighborhood Association	Portland State University, Institute for Natural Resources
Friends of Baltimore Woods	The Intertwine Alliance
Friends of Nob Hill Nature Park	Tualatin Hills Park and Recreation District
Friends of Overlook Bluff	Tualatin Soil and Water Conservation District
Helvetia Community Association	U.S. Fish and Wildlife Service
Kingfisher Ecological Services	Urban Greenspaces Institute
Mark Griswold Wilson Consulting	West Multnomah Soil and Water Conservation District
<b>Funding support:</b>	Metro Nature In Neighborhoods
	U.S. Fish and Wildlife Service Surrogate Species Prog
	Oregon Wildlife Heritage Foundation
	Oregon Department of Forestry
<b>Fiscal sponsor:</b>	Urban Greenspaces Institute
	<a href="http://www.urbangreenspaces.org/">www.urbangreenspaces.org/</a>



## Results

- Volunteers contributed 1,030 hours, collected 7,748 records and 3,179 photos from across 641 square miles.
- OMWG professionals collected 4,971 observations, and we screened and incorporated an additional 7,552 street and heritage tree records from area cities.
- Through an inspection of collected field data in relation to high-resolution aerial photography within ArcGIS we pinpointed more than 26,000 additional Oregon white oak locations.
- During trainings, volunteers learned about Oregon white oak ecology and Native American oak stewardship practices from experts. At the beginning of the effort many volunteers indicated Oregon white oak was not readily recognizable, but through participation in OakQuest they reported gaining a deeper appreciation for the ecosystem and the ability to speak about it's conservation challenges with friends and neighbors.
- From 48 online survey respondents, we learned that most participants felt they made a positive impact (80%) and/or had fun (67%). Personal free time was reported as the most common barrier to participation (75%) for both participants and interested non-participants, with fewer reporting trouble finding required teammates (19%) and/or access to a smartphone (13%) as barriers.
- Native American youth supported volunteers in the field, spearheaded an end-of-season volunteer appreciation event, and completed 1444+ hours of natural resources service-learning with partner agencies and NGOs. As a result of her experience, one Native youth decided to complete a minor in environmental studies at Portland State University to complement her main studies in archeology.

## Next Steps

- OakQuest 2014 data is now being used to train and refine a remote sensing-based map of regional Oregon white oak distribution.
- Pending grant requests may support follow up volunteer oak mapping in select oak-rich neighborhoods in 2015-16, alongside landowner trainings on oak-friendly landscaping and additional Native American youth mentorship and training.
- The completed oak distribution map data will be used to identify conservation corridors, plan land acquisitions, and guide habitat management/restoration thereby strengthening the capacity and effectiveness of the region's natural resource agencies, nonprofits, and citizens to conserve Oregon white oak.

## References

Oregon Department of Fish and Wildlife. 2006. Oregon Conservation Strategy. Salem, OR.  
The Intertwine Alliance. 2012. Regional Conservation Strategy for the Greater Portland-Vancouver Region. A. Shihler, editor. Portland, OR.

