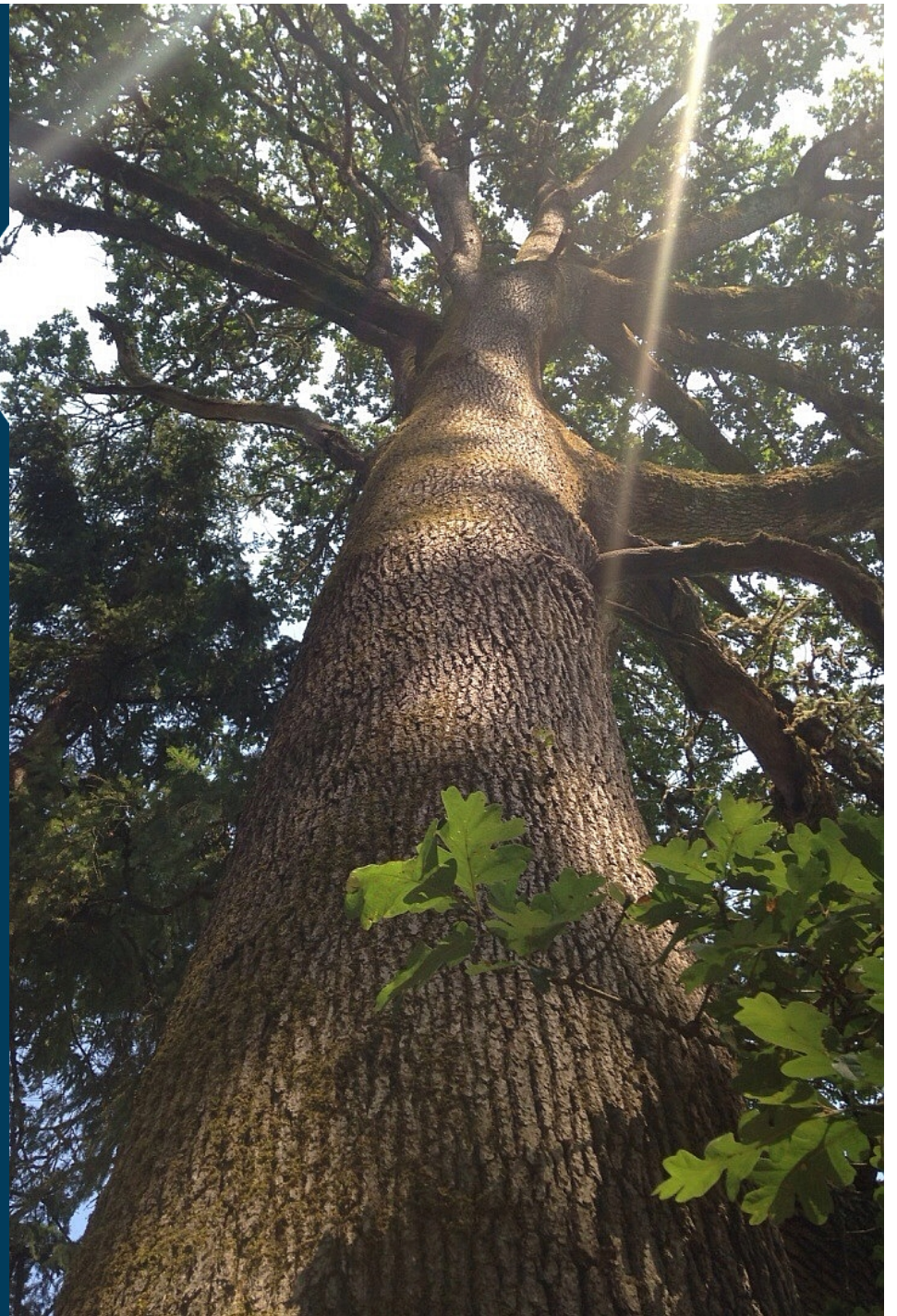


Mapping oak in Northwest Oregon & Southwest Washington

Lori Hennings



Metro





Funding partners

- Metro
- US Fish and Wildlife Service
- Oregon Wildlife Heritage Foundation
- Oregon Department of Forestry / USFS
- Clackamas and Tualatin SWCDs
- Siletz Tribal Youth Education and Employment (TYEE)
- Contributions from multiple OPWG partners



Metro



The Oak Prairie Work Group

- 41 partner organizations
- Active since 2011
- Quarterly meetings
- Strategic Action Plan nearly complete



Metro



Overarching goals

- High quality QUGA distribution map
- Update Reg. Conservation Strategy maps
- Prioritize important oak habitat, connectivity
- Support effective:
 - Collaborative habitat protection
 - Stewardship
 - Education



Metro



Strategic Action Plan (2018)

- Steering committee
- Small work groups for each element
- Elements
 - Spatial data
 - Conserve land
 - Practice active stewardship
 - Knowledge (BMPs, public...)
- Completion: Summer 2018



Metro

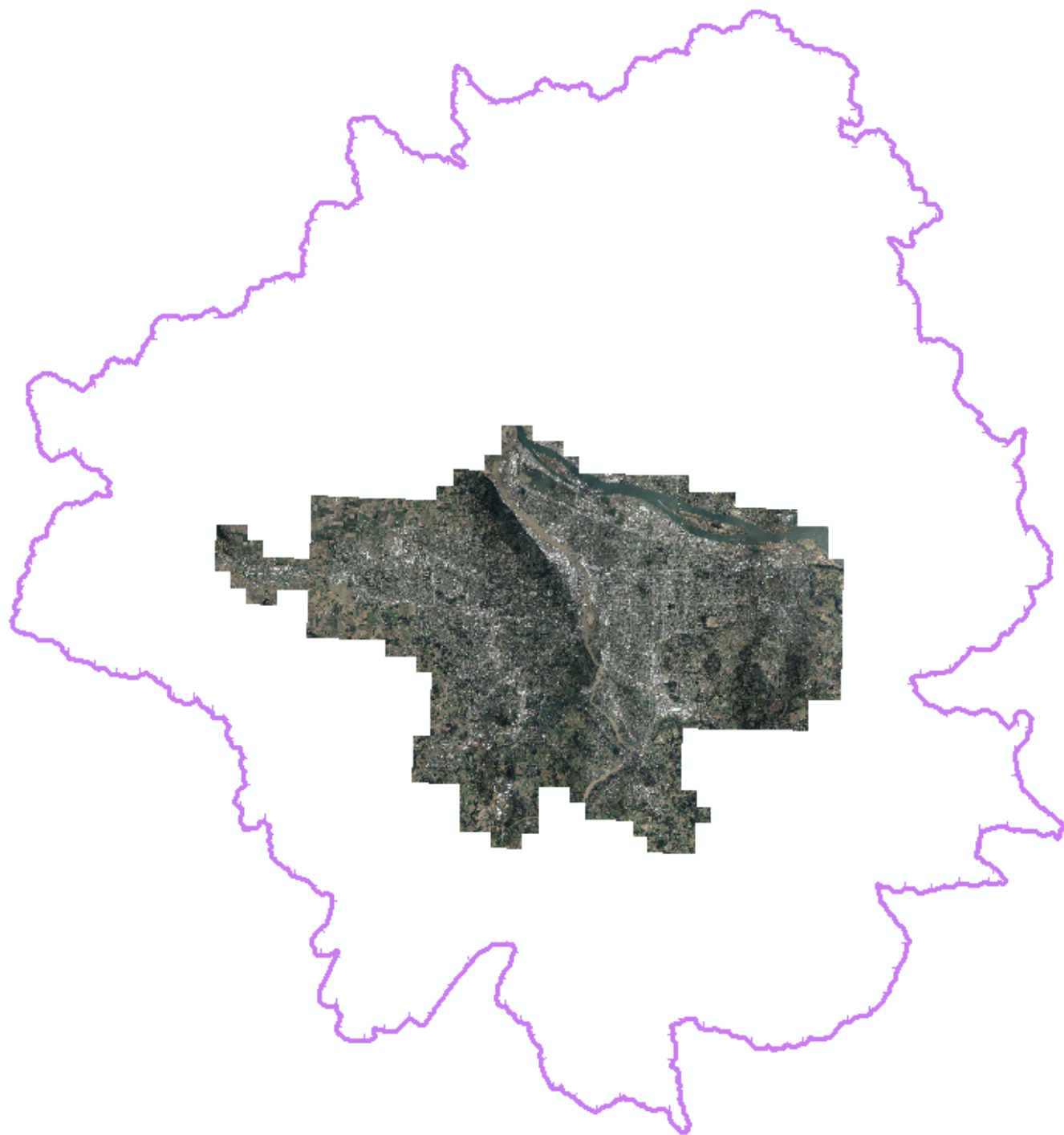


Context

- Large geographic extent: 2,000+ sq mi (OR side; WA adds ~800 sq mi)
- Complex land cover
- PDX: 164 varieties of street trees!
- Tiny portion is QUGA



Metro





Process

- 2012: collected field samples
- 2014-15: community science, pro field work
- 2015-16: remote sensing models
- ☹ models over- or under-counted oaks
- 2017: Decided to complete oak mapping using aerial photos
- June 2018: Oregon side completed



Metro



Challenges

- Aerial photo quality (GIS)
 - Urban: High res aerials; 2012 leaf-off
 - Rural: Lower res. NAIP imagery
 - Differences in registration
- Quality, color varies spatially in same year
- Quality, color varies between years
- Mappers must be skilled
- Inter-annual land cover changes (fire, development, ag...)



Metro



Solutions for aerial issues

- ArcMap for urban, QGIS for rural
- Different aerial years depending on area (urban vs. rural; E vs. W side...)
- Field verification showed good results
- Spatial scale: 1:1,500

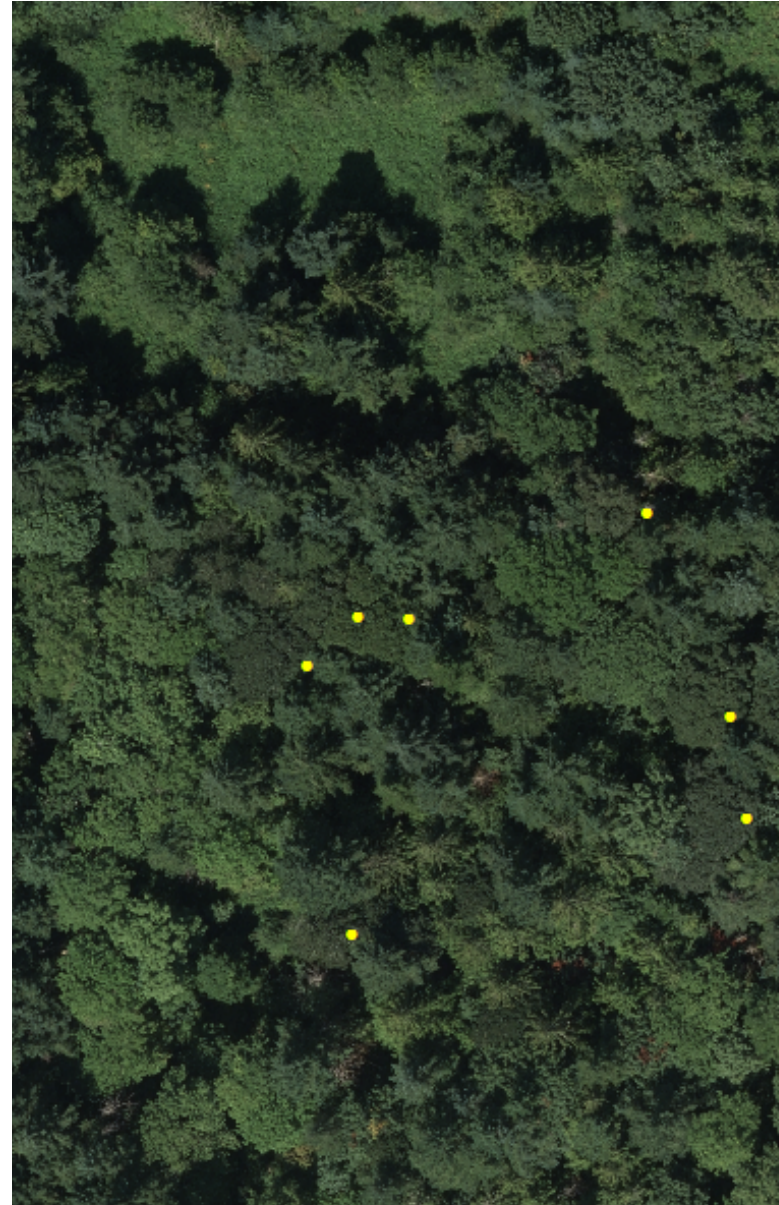
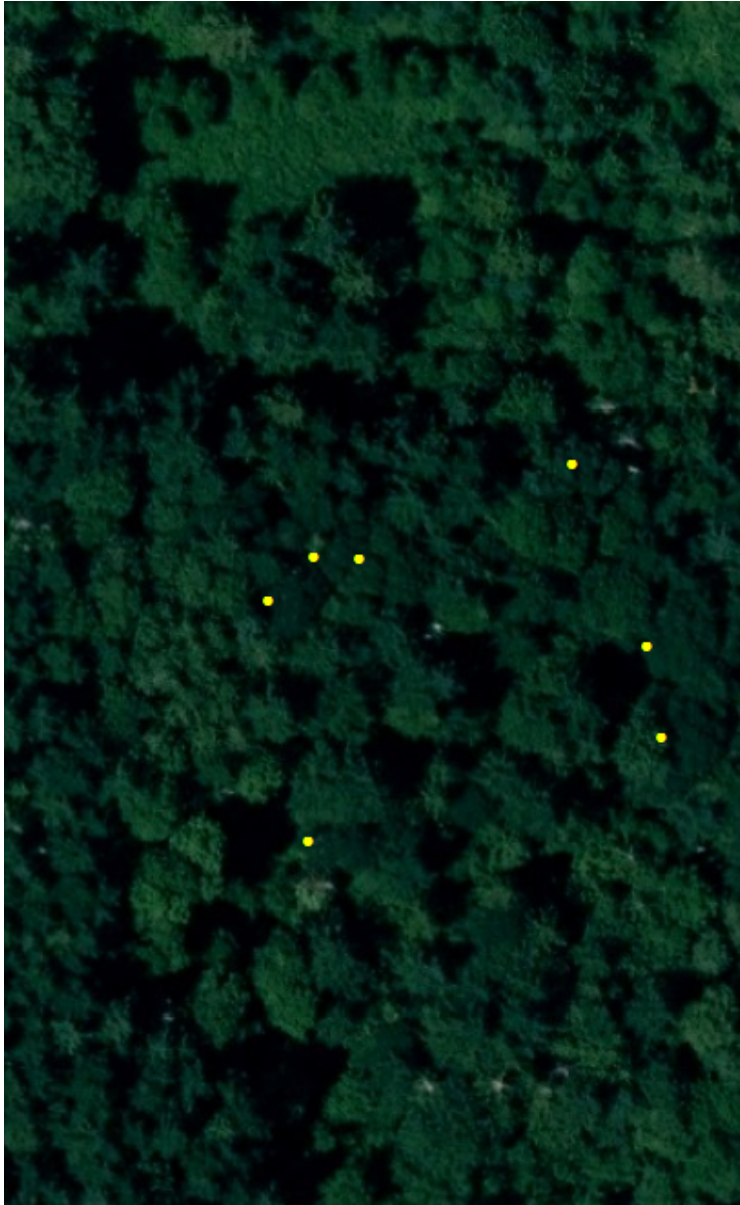


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Urban, 2012 summer vs. winter



Urban, different years (summer)



QGIS (rural), different years

May 2017



QGIS (rural), different years

July 2016



QGIS (rural), different years

April 2015
Leaves still off



Data characteristics

- 3 mappers: Similar skills
- Mildly different density, accuracy
- Focused on distribution, not single trees
 - Low false positives but some missed trees
 - Likely caught most/all significant oak stands
 - Most oak is below 1,200'
 - Exception: Clackamas “canyon” – up to 3,000'

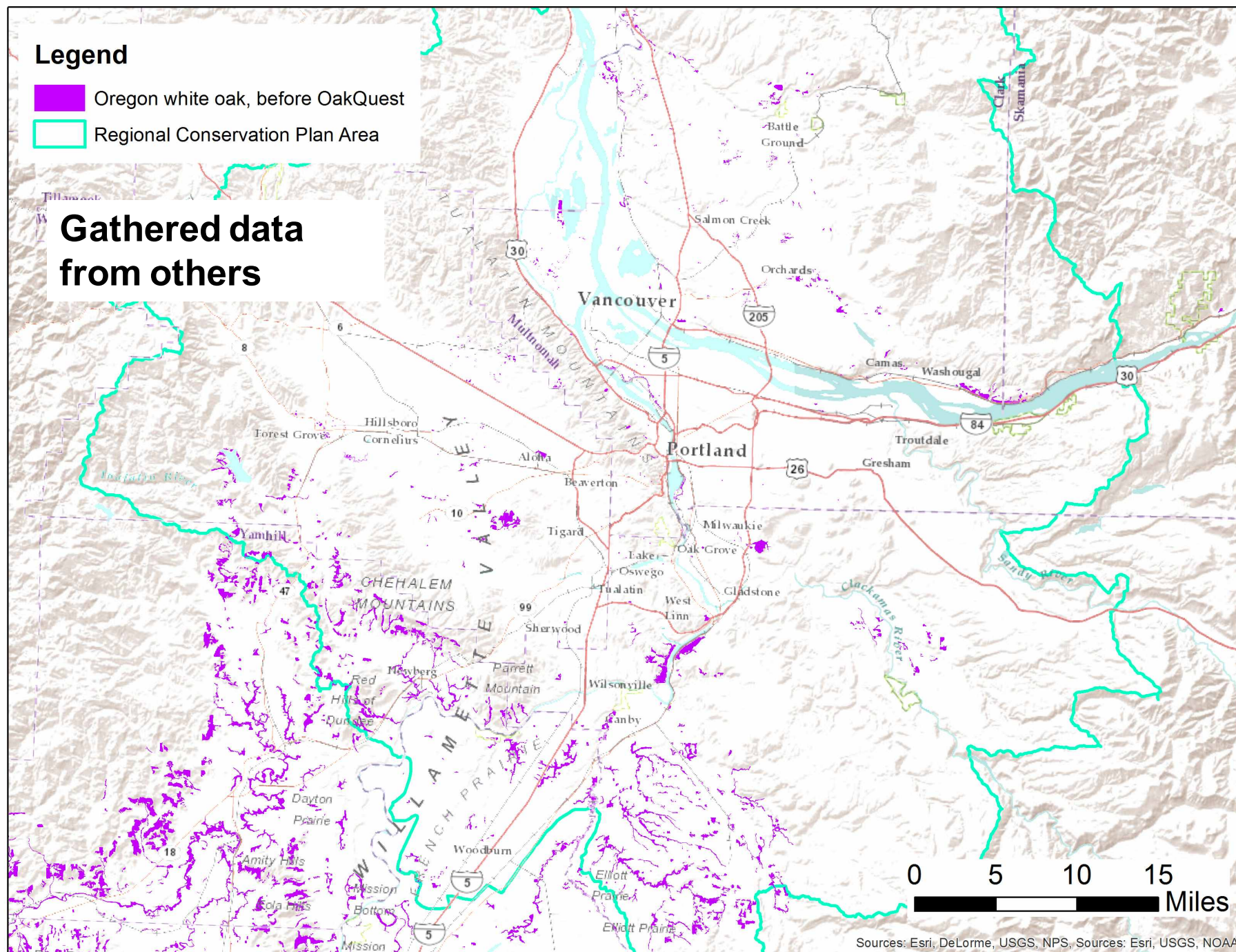
Less than 10% of oaks are protected



Legend

-  Oregon white oak, before OakQuest
-  Regional Conservation Plan Area

**Gathered data
from others**



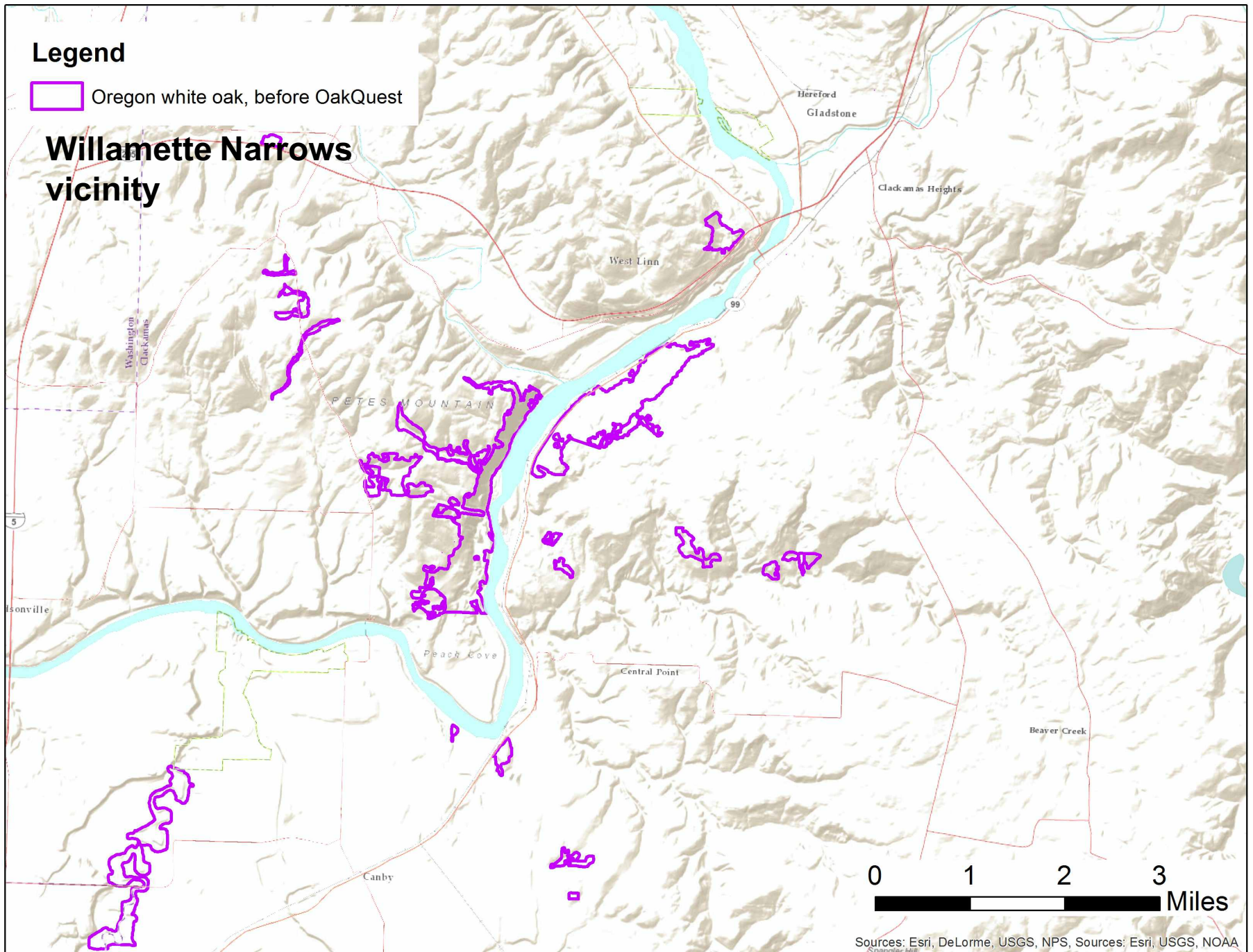
Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

06-2018 OR completion
Clark County: working with
partners
Near infrared helpful

Legend

 Oregon white oak, before OakQuest

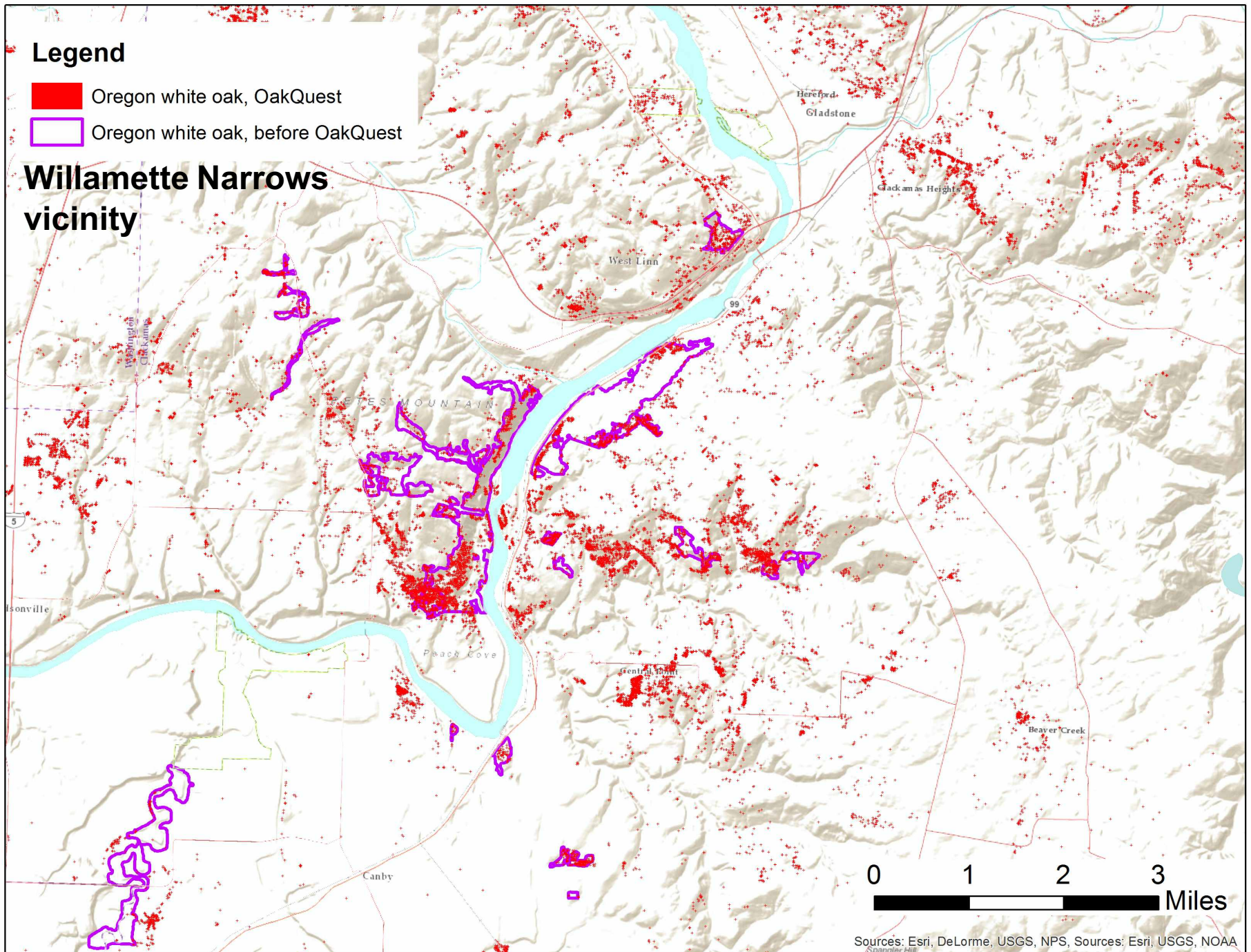
Willamette Narrows vicinity



Legend

- Oregon white oak, OakQuest
- Oregon white oak, before OakQuest

Willamette Narrows vicinity

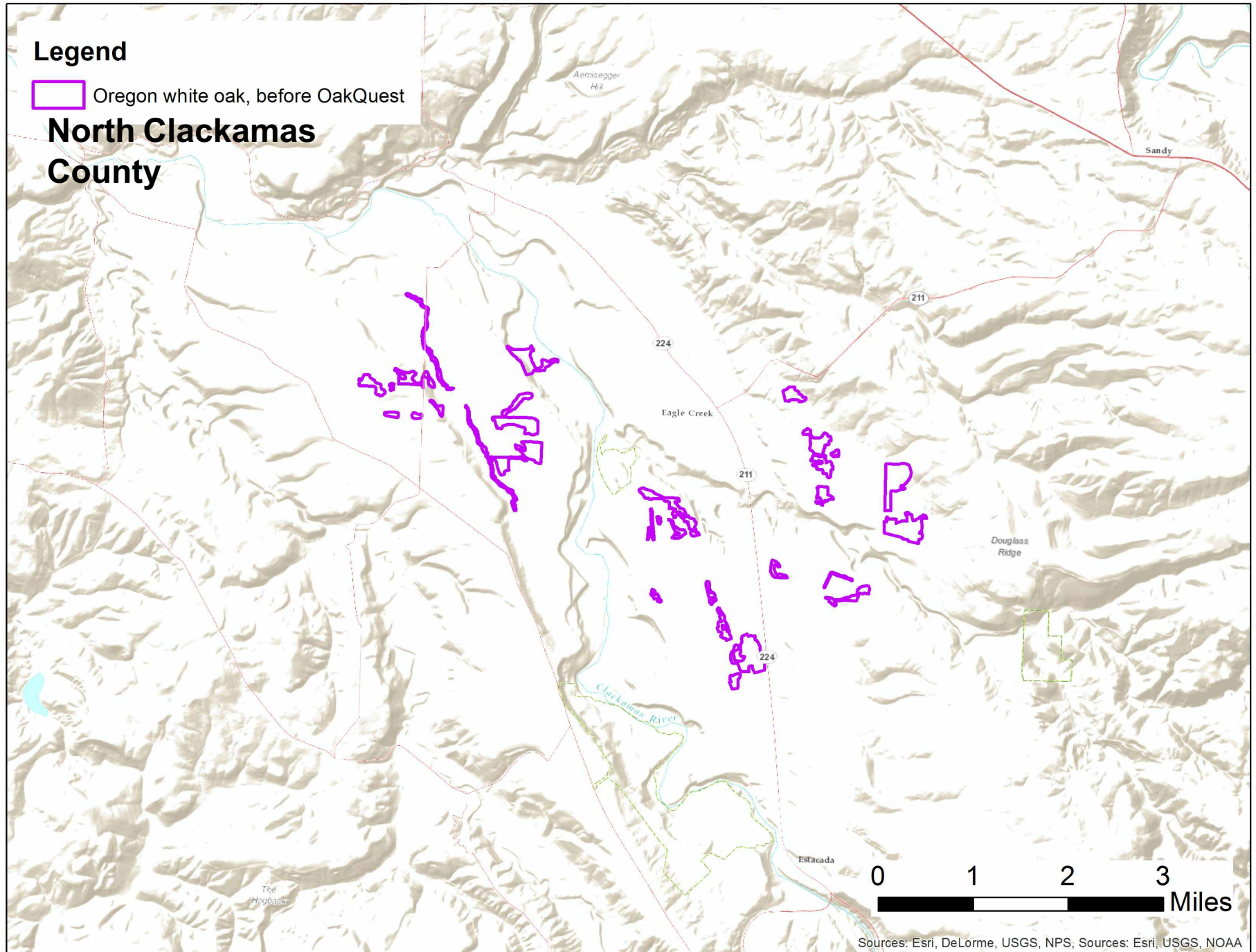


Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

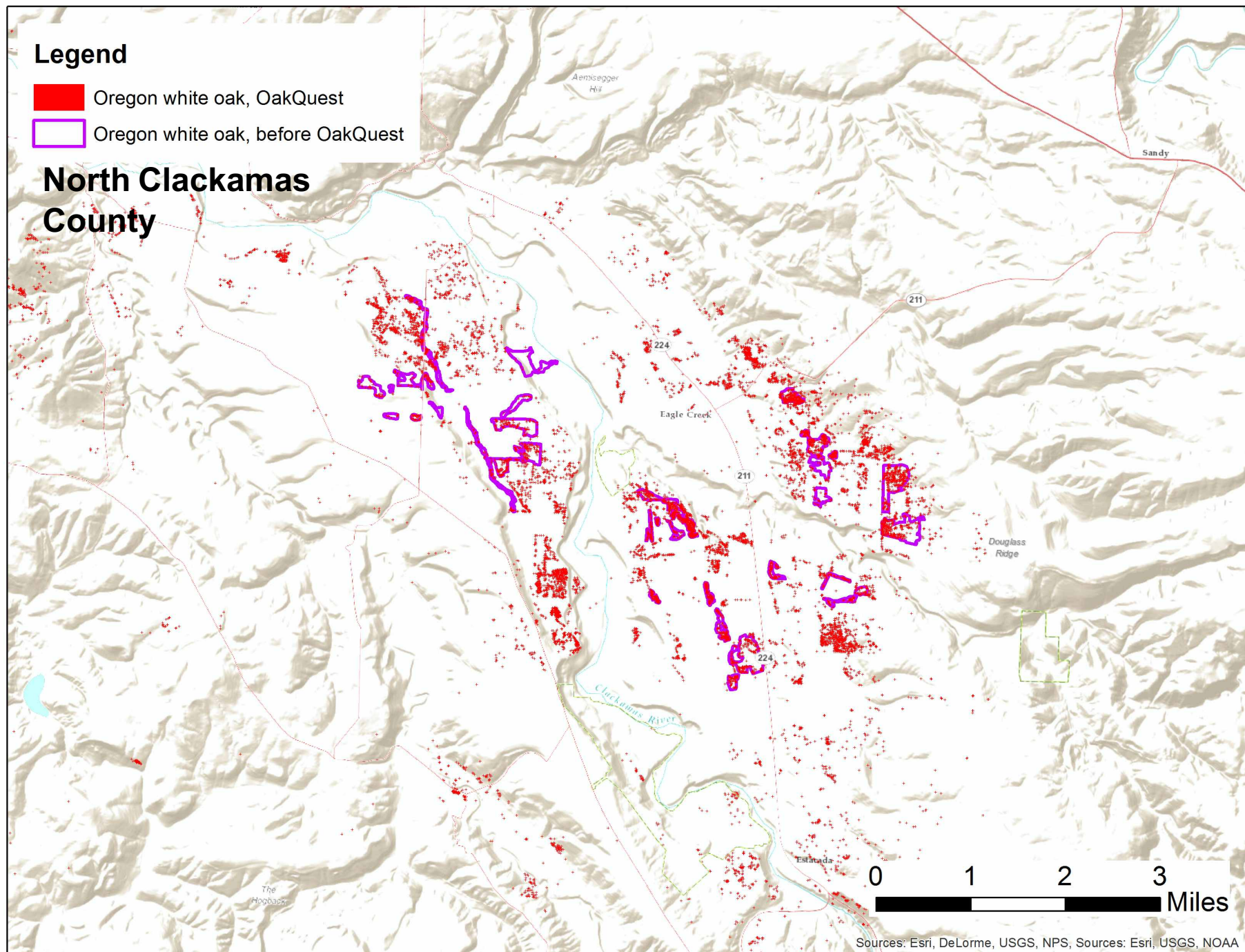
Legend

 Oregon white oak, before OakQuest

North Clackamas County



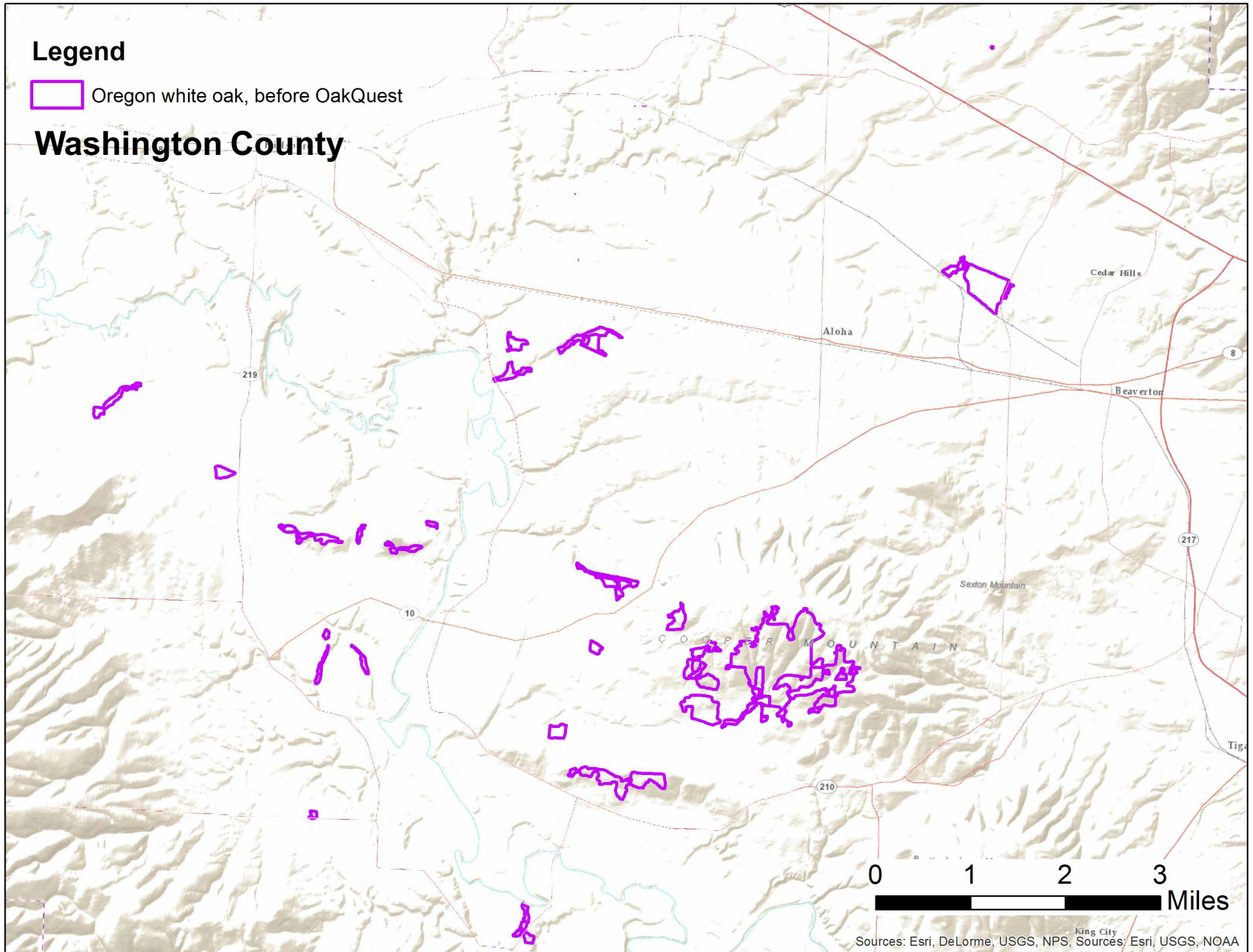
Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA



Legend

 Oregon white oak, before OakQuest

Washington County

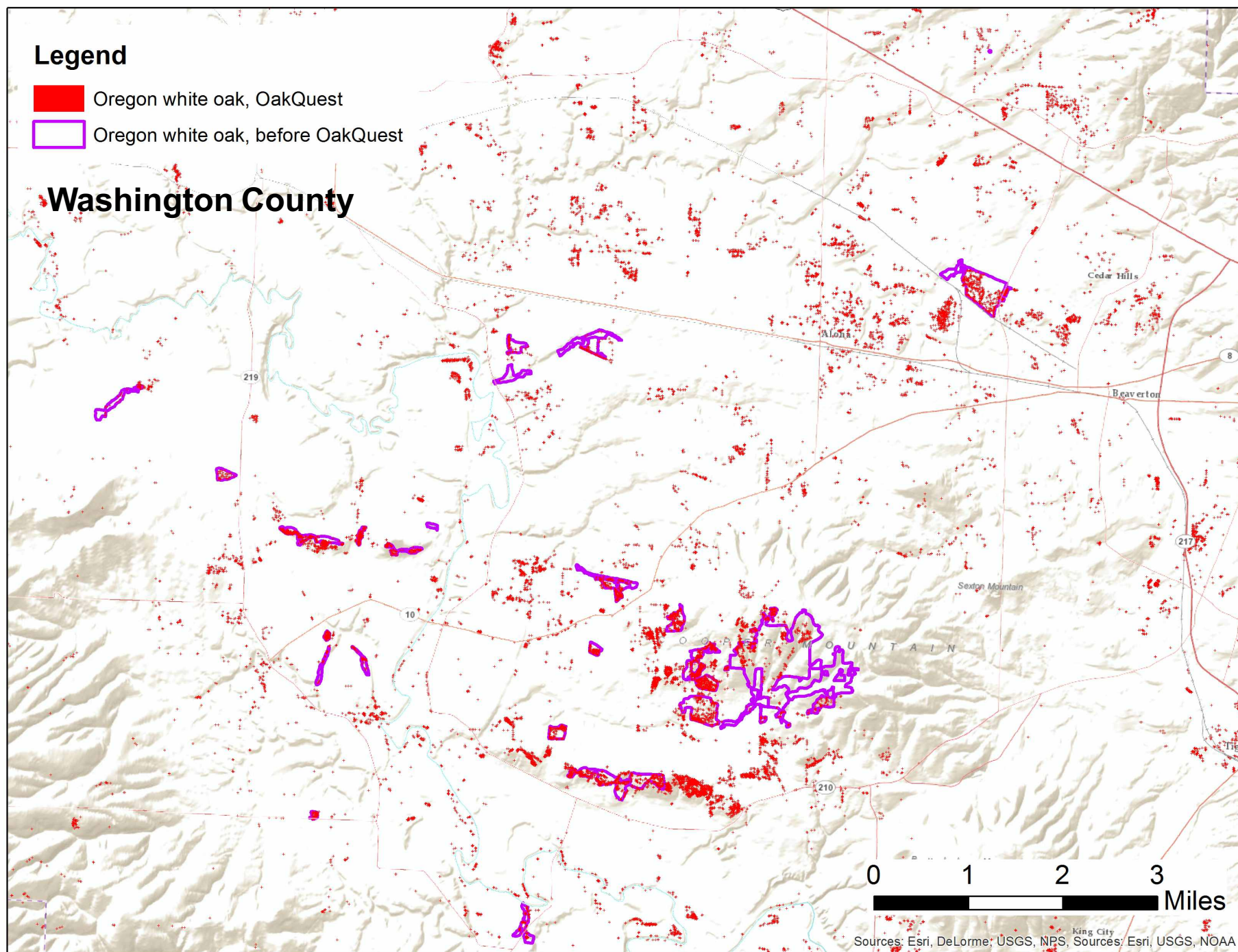


Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

Legend

- Oregon white oak, OakQuest
- Oregon white oak, before OakQuest

Washington County



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA