

Telling the Restoration Story: Plants for People Technical Report



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Report for The Confederated Tribes of Grand Ronde

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PREFACE

IAE is a non-profit organization whose mission is the conservation of native ecosystems through restoration, research, and education. IAE provides services to public and private agencies and individuals through development and communication of information on ecosystems, species, and effective management strategies. Restoration of habitats, with a concentration on rare and invasive species, is a primary focus. IAE conducts its work through partnerships with a diverse group of agencies, organizations, and the private sector. IAE aims to link its community with native habitats through education and outreach.



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Cover photographs: Camas bulb harvested from the tribal native plant nursery. Photo by Jeremy Ojua, November 8, 2016.

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1. BACKGROUND

The Willamette Valley has been shaped by indigenous land management practices for millennia, resulting in a landscape that once had large open prairies and oak savanna, yielding many important plant species used for food, clothing, and cultural practices. European colonization has resulted in a decline of these landscapes and their associated plant species, as well as the elimination of traditional land management practices such as burning and harvesting.

The oak and prairie habitats that remain are small, isolated, and degraded, making it more difficult than ever for tribal members to gather and harvest traditional plant materials. Remnant sites are often under private ownership, are difficult to access, especially for children and elders, and may have unknown pesticide use history, making them unsuitable for consumption or for indigenous arts such as basketry, which can involve placement of the plant materials in the artisans' mouths. Tribal members often drive for several hours to reach the few currently available harvest sites. Even when restoration occurs in suitable, local habitats there is a lack of commercially available native plant species. Many culturally significant plant species are challenging to grow, require special equipment to produce, and have limited commercial markets.

1.1. History

The Confederated Tribes of Grand Ronde (CTGR) are the descendants of over 30 tribes and bands from western Oregon, southwest Washington, and northern California. These tribes and bands include but are not limited to the Tillamook, Clackamas, Rogue River, Molalla, Kalapuya, Umpqua, Nestucca and Chasta Tribes. The ancestors lived along the coast and interior valleys of Oregon for time immemorial. The indigenous population of the Willamette Valley was decimated by several epidemics starting with direct contact with Europeans.

Several treaties were ratified between CTGR and the U.S. Government, which resulted in the relocation of Grand Ronde ancestors to a Reservation near Grand Ronde, Oregon between 1855-1875. The original Reservation was established in 1857 under executive order, encompassed an area of more than 60,000 acres, and was located on the eastern side of the Coast Range at the headwaters of the Yamhill River, approximately 25 miles east of the Pacific Ocean. Decades later, the General Allotment Act of 1887 removed the land from Tribal ownership and transferred it to individual tribal members, allowing it to be sold off. 25,791 acres of the original reservation were also sold off as government 'surplus' in 1901. Only a small portion of the original Reservation was held in common by CTGR in 1954 when Congress terminated the Government's relationship with and recognition of CTGR. Though stripped of their lands and dispersed to areas with greater economic opportunity, the tribe remained an interconnected community and began to lobby for restoration in the early 1970's, and in 1983, their status was restored by the Government. In 1989, the Natural Resources Department of CTGR was created to manage the land.

CTGR owns and manages 10,212 acres of Reservation forestland. Non-Reservation trust land holdings total approximately 523 acres and fee land holdings total approximately 1,641 acres. CTGR also owns over 2,500 acres of conservation properties in the Willamette Basin.

Each of these ownership types and locations has a unique purpose and management plan, with goals that include restoration and native plant use. For instance, the Reservation is a working forest, therefore most of the plant needs will be for reforestation following a timber harvest. There will be a minor need for plants in meadows and riparian restoration projects on the Reservation. In contrast, the management plans for the conservation properties will focus efforts to restore habitat for fish and wildlife.

The Natural Resources Department manages the natural areas for the following uses:

- Oak savanna
- Wildlife habitat
- Fish habitat
- Threatened or endangered species
- Other rare plant species
- Recreation
- Education

Native plants are essential to the traditional and current tribal lifeways, economy, and wealth of the CTGR people. Plants were, and still are, used for food, clothing, housing materials, hunting, fishing, cooking, medicines and many other things. A list of culturally significant species can be found in Appendix 1. Plant lists.

To address the issue of limited culturally significant plant materials, the Institute for Applied Ecology (IAE) and CTGR applied for a grant in 2014 with the Oregon Watershed Enhancement Board (OWEB) to build a nursery and produce culturally important species such as large camas (*Camassia leichtlinii*) and Gairdner's yampah (*Perideridia gairdneri*), and to restore cultural harvest sites across the Willamette Valley. Over the next decade three OWEB grants were awarded and collectively the project is known as Plants for People.

2. GOALS

The vision of the Plants for People project was to integrate indigenous management practices and tribal participation in the restoration of critical prairie and oak habitats throughout the Willamette Valley. Specific goals included:

1. Establishing a tribal native plant materials program at CTGR to increase availability of culturally significant plant materials for use in restoration projects and traditional tribal practices,
2. Restoring diverse, resilient prairie and oak habitat that supports native species, including culturally significant plants,
3. Incorporating traditional indigenous management practices into habitat restoration, and
4. Improving access to appropriate sites for traditional gathering and harvest of plant materials by tribal members.

3. TRIBAL NATIVE PLANT NURSERY

3.1. Establishment

Construction of the tribal native plant nursery began in July 2014, when CTGR and IAE constructed two raised beds, each measuring 60' long x 5' wide x 2.5' tall at the CTGR Natural Resources Department (NRD) headquarters. The beds are made of untreated cedar siding lined with wire mesh and ground cloth to limit weeds and voles with a soil of 71% sandy loam, 23% compost, and 6% pumice.

To fill the new beds, the USDA Natural Resources Conservation Service Plant Materials Center (PMC) donated 1,200 large camas bulbs, and the City of Eugene donated 1,200 Gairdner's yampah (*Perideridia gairdneri*) tubers purchased from Heritage Seedlings (Table 1). CTGR also purchased Tolmie star-tulip (*Calochortus tolmiei*), crown brodiaea (*Brodiaea coronaria*), narrowleaf onion (*Allium amplexans*) bulbs, and barestem biscuitroot (*Lomatium nudicaule*) root divisions from Seven Oaks Native Nursery. In October 2014, CTGR and IAE planted one raised bed with the large camas and planted the remaining species in the second bed in November 2014. CTGR upgraded the wooden beds to more resilient and longer-lasting metal beds in 2023.

Table 1. Plant materials used in establishing the tribal native plant nursery.

Bed Type	Common name	Species	Type	Amount
Raised beds	Gardner's yampah	<i>Perideridia gairdneri</i>	bulb	1200
	Large camas	<i>Camassia leichtlinii</i>	bulb	1200
	Tolmie star-tulip	<i>Calochortus tolmiei</i>	bulb	300
	Crown brodiaea	<i>Brodiaea coronaria</i>	bulb	300
	Narrowleaf onion	<i>Allium amplexans</i>	bulb	300
	Barestem biscuitroot	<i>Lomatium nudicaule</i>	root	300
Cutting beds	Lewis' mock orange	<i>Philadelphus lewisii</i>	cutting	74
	Pacific ninebark	<i>Physocarpus capitatus</i>	cutting	48
	Redosier dogwood	<i>Cornus sericea</i>	cutting	56
	Pacific willow	<i>Salix lucida</i>	cutting	28
	Ocean spray	<i>Holodiscus discolor</i>	cutting	75
	Indian plum	<i>Oemleria cerasiformis</i>	cutting	57
Seed production beds	Coast tarweed	<i>Madia sativa</i>	pound	3.8
	Cow parsnip	<i>Heracleum lanatum</i>	pound	3.6

In August 2014, CTGR created two 60' x 5' cutting beds by applying glyphosate herbicide and tilling with a tractor. The PMC donated six native shrub species for the beds: Lewis' mock orange (*Philadelphus lewisii*), Pacific ninebark (*Physocarpus capitatus*), redosier dogwood (*Cornus sericea* ssp. *sericea*), Pacific willow (*Salix lucida*), oceanspray (*Holodiscus discolor*), and Indian plum (*Oemleria cerasiformis*) (Table 1).

Seed production took place at PMC, IAE, and CTGR. In 2015, PMC established a 0.2-acre production bed of coast tarweed (*Madia sativa*), using seed collected by IAE from 37 sites throughout the Willamette Valley in 2014 (Table 1). IAE established three beds at the Oregon State University Vegetable Research Farm in collaboration with the Willamette Valley Native Plants Material Partnership: a 0.13-acre barestem biscuitroot bed and a 0.17-acre toughleaf iris (*Iris tenax*) bed in 2018, and a 0.07-acre narrowleaf onion bed in 2020.

CTGR's oldest seed production bed is from 2016, when they created a 60' field of cow parsnip (*Heracleum lanatum*). CTGR added three new seed production beds in 2018 for toughleaf iris (*Iris tenax*), fernleaf biscuitroot (*Lomatium dissectum*), and barestem biscuitroot, then created a 20' x 5' Virginia strawberry (*Fragaria virginiana*) bed in 2019, and a narrowleaf onion bed in 2020. All plant divisions and seed for the beds came from property owned by CTGR.

In addition to the raised and seed production beds, CTGR grew additional species such as Oregon white oak (*Quercus garryana*) and yerba buena (*Clinopodium douglasii*) in containers. A full list of species produced at the tribal native plant nursery can be found in Appendix 1. Plant lists.

3.2. Harvest

Bulb production at the tribal native plant nursery increased throughout the length of the project (Figure 1). In 2016, CTGR harvested 200 large camas and 200 Gairdner's yampah for planting at restoration sites. Tolmie star-tulip survivorship was poor and CTGR ended up discontinuing the bed. From 2017 to 2019, IAE planted 2,240 large camas and 1,900 Gairdner's yampah grown at the tribal native plant nursery at restoration sites throughout the Willamette Valley (see Section 5.2 Planting). In 2021-2022, CTGR provided an additional 800 Gairdner's yampah, 925 crown brodiaea, and 750 narrowleaf onion to plant at restoration sites. It is notable that the bulbs produced in 2023 outnumber those produced in 2024 (Figure 1). This is because some of the bulbs produced in 2023 were used to start new raised metal beds in 2024.

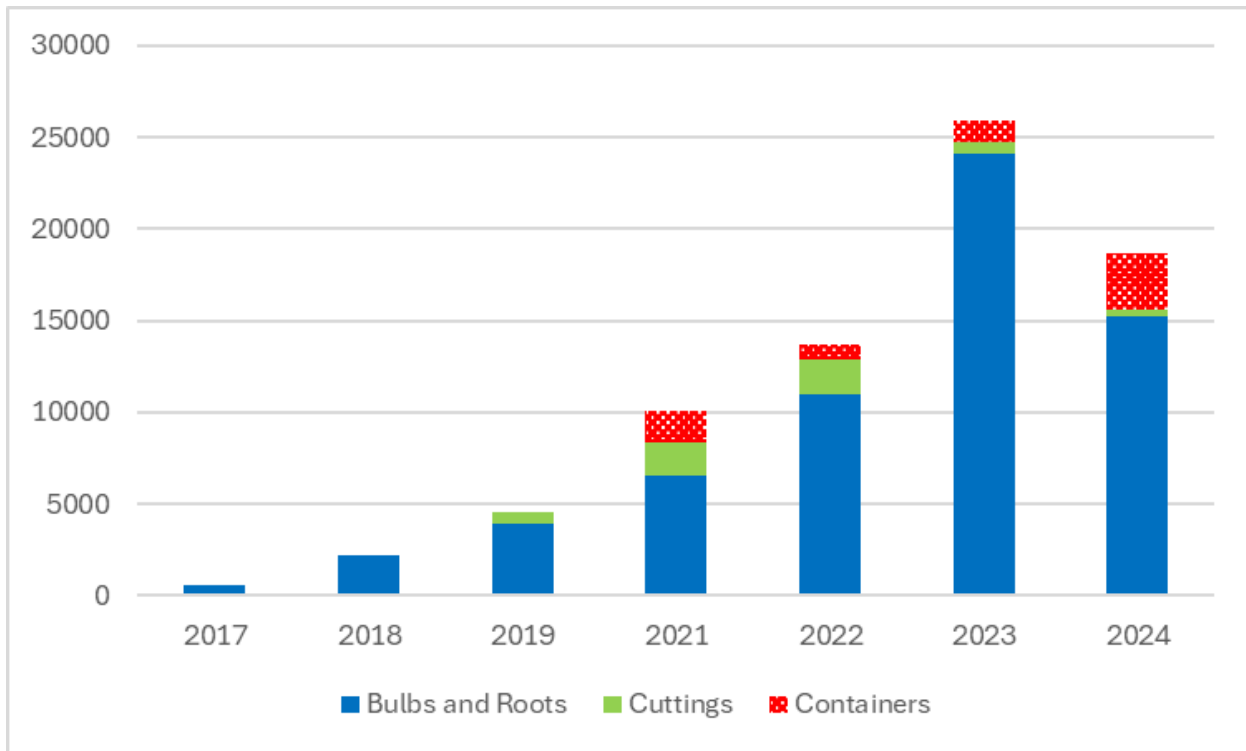


Figure 1. Bulb, root, cutting, and container production at the tribal native plant nursery, 2017-2024.

CTGR started harvesting cuttings in 2019 (Figure 1), after groundwater saturation, deer browse, and spring frosts killed many of the initial plantings. Summer survival improved after installing drip irrigation and bark mulch, although three species - Lewis' mock orange, ocean spray and Indian plum - did not establish sufficiently, and CTGR replaced them with dune willow and rose spirea. After installing deer fencing in 2021, herbivory was greatly reduced and CTGR was able to grow the three initial species, as well as many others, in containers instead.

Seed harvest began in 2016 and continued through the project. In 2016, PMC harvested 10 pounds of coast tarweed. In 2017, the tribal native plant nursery produced their first seed harvest of cow parsnip, Gairdner's yampah, large camas, crown brodiaea, narrowleaf onion, and barestem biscuitroot (Figure 2). Seed production has increased steadily, and in 2024, the tribal native plant nursery produced 13 pounds of seed from 14 different species (Figure 2).

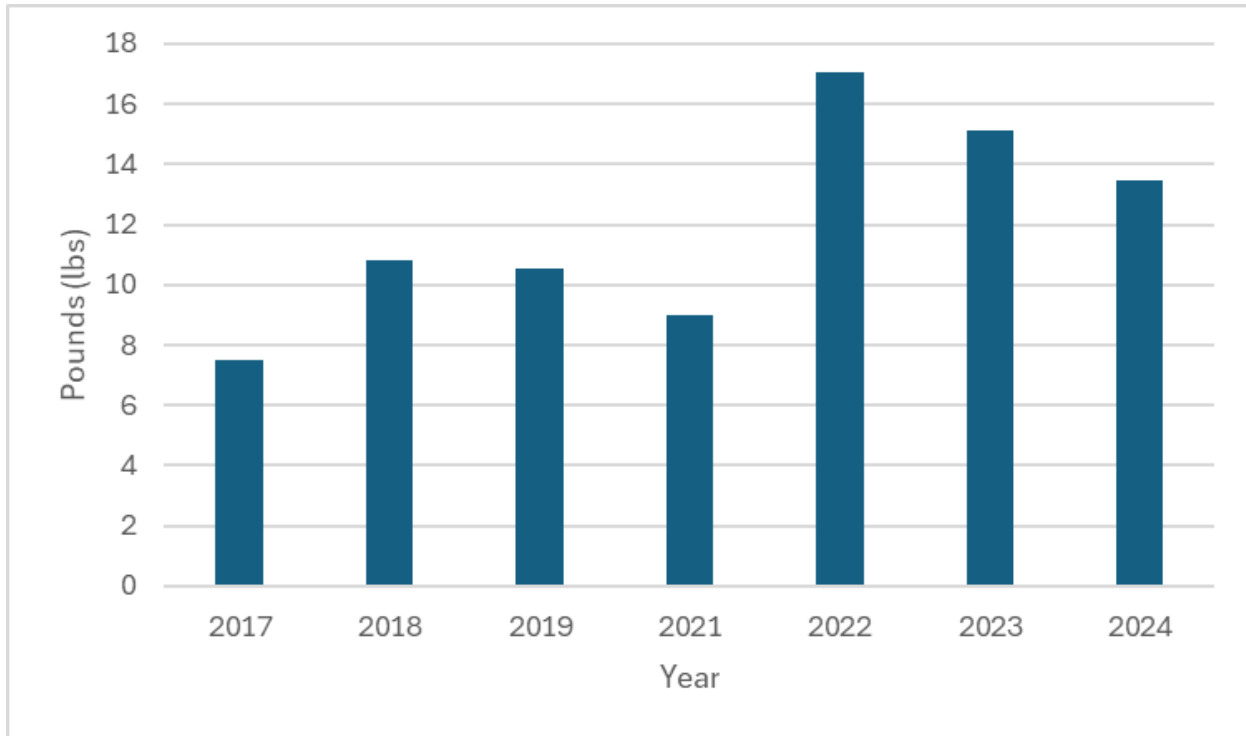


Figure 2. Seed production at the CTGR native plant nursery, 2017-2024.

CTGR made use of the many plant materials grown at the tribal native plant nursery for education workshops, transplanting to other raised beds in the Grand Ronde community, and restoring properties not associated with the Plants for People grant. The total plant materials produced at the tribal native plant nursery are listed in Table 2.

Table 2. Total plant material produced by the tribal native plant nursery, 2017-2024

Type	Amount
Seed	83.42 lbs.
Bulbs and roots	61,349
Cuttings	5,260
Containers	31,343

The three seed production fields established at IAE in part by the Plants for People grant are still active. After a nominal yield the first year, the beds have produced a total of 15 pounds of narrowleaf onion seed, 521 pounds of toughleaf iris, and 502 pounds of barestem biscuitroot seed (Figure 3). Seeds per pound differ for each species, so this is approximately 5,274,405 seeds of narrowleaf onion, 18,381,401 seeds of toughleaf iris, and 20,850,570 seeds of barestem biscuitroot.

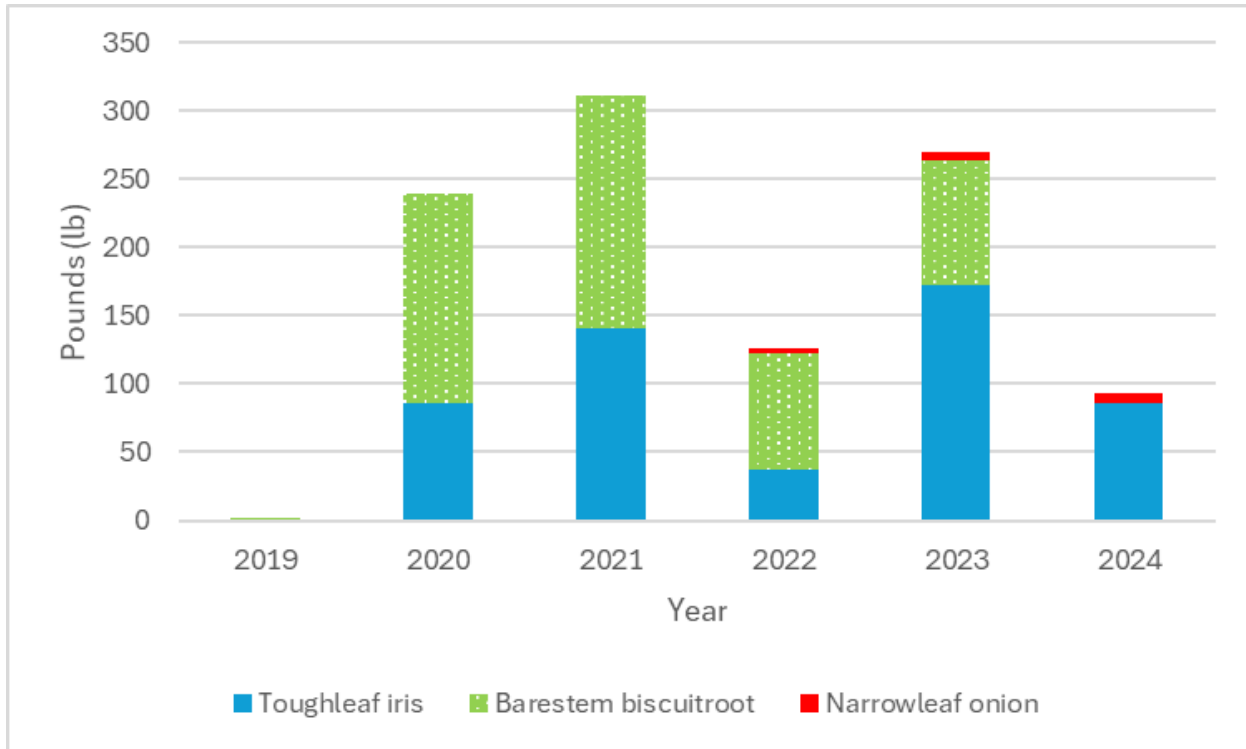


Figure 3. Pounds of seed produced in partnership with Plants for People and the Willamette Valley Native Plant Material Partnership.

4. RESTORATION SITES

Habitat restoration took place on seven sites throughout the Willamette Valley (Figure 4), five owned by CTGR, and two public sites that were historically important gathering and harvesting areas: Herbert Farm and Natural Area (Herbert; owned by the City of Corvallis) and Champoeg State Heritage Area (Champoeg; owned by Oregon Parks and Recreation Department) (Table 3).

Table 3. Restoration sites for the Plants for People project.

Site Name	Ownership	Project Acres
Rattlesnake Butte	CTGR	10
South Yamhill	CTGR	9.5
Thompson	CTGR	9.6
Natural Resources Department	CTGR	14.4
Tyee Nature Preserve	CTGR	1.7
Herbert Farm and Natural Area	City of Corvallis	87.5
Champoeg State Heritage Area	Oregon Parks and Recreation Department	45

4.1. Rattlesnake Butte

Rattlesnake Butte is a 276-acre property near Monroe in Lane County, which is owned by CTGR and has a 97-acre conservation easement held by Bonneville Power Association (BPA)/Oregon Department of Fish and Wildlife (ODFW) through the Willamette Wildlife Mitigation Program (WWMP). The property is in the foothills of the Coast Range and is comprised of a basalt ridge with south-facing slopes. Shallow dry soils and rock outcrops along the ridge support several rare plant communities, such as the Lemmon's needlegrass (*Achnatherum lemmonii*)/silver moss (*Racomitrium canescens*) plant community and Roemer's fescue (*Festuca roemerii*) grassland, Oregon white oak savanna, and animals such as the Western rattlesnake (*Crotalus oreganus*). At the beginning of the project, the historic oak savanna at Rattlesnake Butte had begun to transition into a Douglas-fir dominated forest with a shrub understory.

4.2. South Yamhill

South Yamhill is a 137-acre property located near Grand Ronde and owned by CTGR. Nine acres are designated for conservation with a focus on forest meadow habitat. In 1995, the previously threatened Nelson's checkermallow (*Sidalcea nelsoniana*), was transplanted to the site as mitigation for construction of the nearby Spirit Mountain Casino. Before restoration began, South Yamhill was predominated by Himalayan blackberry (*Rubus armeniacus*), Scotch broom (*Cytisus scoparius*), and Douglas-fir.

4.3. Thompson

Thompson is a 30-acre property located near Grand Ronde and owned by CTGR, with 18 acres designated for conservation of prairie and grassland habitats. This site's conservation and restoration is important to the tribal community because of its proximity to Grand Ronde and utilization by tribal members for plant harvesting. Mature Scotch broom had overtaken much of the prairie prior to the start of the project.

4.4. Natural Resources Department

The Natural Resources Department (NRD) of CTGR sits on a 37-acre property on Hebo Road near Grand Ronde, and includes the department office complex, the tribal native plant nursery, a nature trail, and various natural areas. There is a 13-acre oak savanna, a one-acre oak savanna with a small pond, and a small 0.15-acre slope. It was selected for the project because of its central location for gathering opportunities.

4.5. Tyee Nature Reserve

Tyee Nature Reserve is a 2.5-acre CTGR property within the Grand Ronde community which is designated for conservation with a focus on wetland and upland prairie. Tyee hosts a native and augmented population of Nelson's checkermallow. This site was part of the OWEB-funded Nelson's checkermallow project (#210-3054) that included removing invasive species and planting native species, including Nelson's checkermallow. It was selected for the project because of its central location for gathering opportunities.

4.6. Herbert Farm and Natural Area

Herbert Farm and Natural Area (Hebert Farm) is a 221-acre property located south of Corvallis in Benton County, Oregon. It is owned and administered by the Parks and Recreation Department of City of Corvallis (City) and has a conservation easement with ODFW through the WWMP. Historically, it was

used by indigenous tribes to gather wetland resources such as camas, wapato (*Sagittaria latifolia*), and cattail (*Typha latifolia*), and probably to hunt for waterfowl, fish, and game. Euro-American settlement began around 1847 and thereafter most of the area was farmed. Within the site, small prairie remnants that were not actively farmed are home to rare plant species such as Kincaid's lupine (*Lupinus oreganus*) peacock larkspur (*Delphinium pavonaceum*) and Nelson's checkermallow. Herbert Farm was in active ryegrass production at the beginning of the Plants for People project in 2013.

4.7. Champoeg State Heritage Area

Champoeg is a 622-acre property adjacent to the Willamette River, near Newberg in Marion County, and is managed by Oregon Parks and Recreation Department (OPRD). Historically, the area was an important trade, gathering, and food harvesting location for local tribes and open prairie habitats were maintained by periodic intentional fires. The word Champoeg (or Champuik) referred to a hill in the vicinity where native people gathered yampah roots for food. Other food and fiber plants that were likely gathered on site include two species of camas, common rush (*Juncus effusus*), hazelnut (*Corylus cornuta*), and many others. In 2013, at the beginning of the project, Champoeg was a grassland predominated by tufted hairgrass (*Deschampsia cespitosa*) without any flowering plants.



Figure 4. Location of Plants for People project sites in the Willamette Valley.

5. HABITAT RESTORATION

5.1. Site preparation

Invasive species management

Invasive species threaten native ecosystems by creating monocultures that crowd out native plants, reduce diversity, and limit seed set. Each species requires a different management strategy, and can include a combination of hand pulling, mowing, mechanical removal, thermal treatment, and herbicide application.

Oak and prairie ecosystems are particularly vulnerable to infestations from non-native grasses. Oregon prairies have primarily evolved with bunchgrasses that were regularly burned, allowing forbs to germinate in the bare ground. Introduced grasses such as tall oatgrass (*Arrhenatherum elatius*) and reed canarygrass (*Phalaris arundinacea*) infest areas by creating monocultures with heavy thatch that eliminates bare ground and crowds out native forbs.

For the Plants for People Project, contract crews hand pulled tall oatgrass from a 10-acre area at Rattlesnake Butte and IAE and CTGR hand pulled reed canarygrass from a 0.5-acre area at South Yamhill. Where grass was growing in and among rare plants, such as Nelson's checkermallow, IAE applied herbicide by wiping the grass stems with hand-held sponge applicators. Subcontractors also mowed grass to reduce thatch.

Scotch broom is an invasive shrub that can quickly dominate open spaces, and it is present at most project sites. At Thompson and Tyee, IAE and CTGR managed Scotch broom by using weed wrenches to pull up the roots, applied herbicide to foliage, and conducted annual mowing to control new seedlings.

In areas designated for harvesting by tribal members, IAE and CTGR did not use herbicide. Designated gathering areas are important because tribal members are wary about collecting where herbicides have been used, as such, designated harvest areas are considered 'safe spots' for gathering and collecting plant materials. CTGR hand weeded the harvest areas at NRD and Thompson, and IAE organized regular volunteer events at Herbert Farm and Champoeg reaching over 300 people (Figure 5, Table 4). The volunteer events not only worked to manage invasive weeds but also engaged the local community and educated them about the importance of culturally-significant plants.

Table 4. Volunteer work events by date and location.

Location	Date	Total volunteers
Herbert Farm	Nov-16	12
	3-Nov-17	6
	Nov-18	24
	26-Oct-19	40
	November 6 and 27, 2019	12
	24-Feb-20	5
Champoeg	13-Oct-18	40
	27-Oct-18	24
	8-Nov-19	43
	11-Sep-21	19
	20-Nov-21	26
	26-Jun-22	5
	7-May-22	8
	26-Apr-23	29
	22-May-23	8
	26-Jun-23	7
Total		308 volunteers

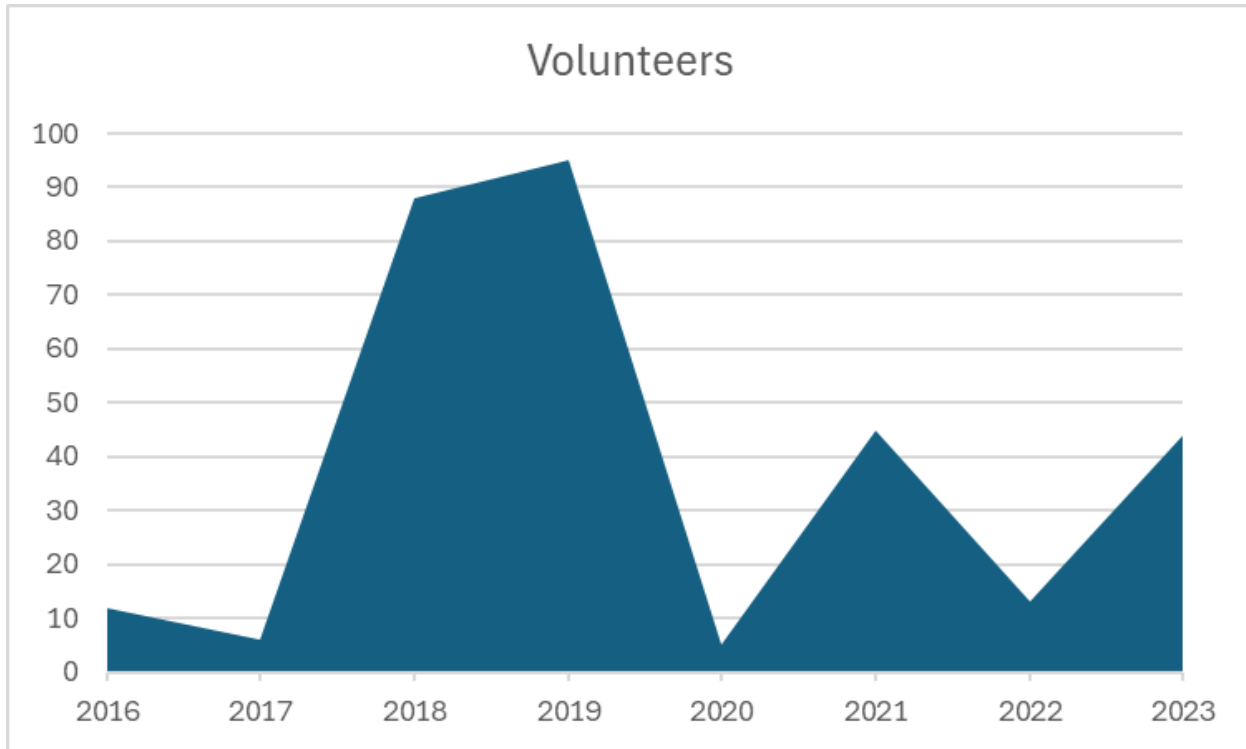


Figure 5. Volunteers attending work events by year.

Residual herbicide

Roots and bulbs can store chemicals after they have broken down in the surrounding soil. To determine if plants were safe for harvesting at the designated harvest area at Champoeg, IAE tested for a variety of chemical residues in the soil and plants (Table 5). After three years without herbicide use, the chemicals have effectively broken down and are not present in the plant materials.

The chemicals that remain reflect the historical use of the site. DDT, and its breakdown product DDE, were pesticides widely used on croplands before being banned in 1972. Diuron and DCPMU are other common herbicides not used at Champoeg since before its transition to native prairie in 2000.

Glyphosate, and its breakdown product AMPA, were applied on invasive species up until 2020 and are now inactive in the soil. The slight increase in glyphosate from 2018 to 2023 reflects natural differences in the soil where they were randomly sampled.

Table 5. Chemical residue tests done at Champoeg State Heritage Area.

Type	Year	Area	DDT (mg/kg)	DDE (mg/kg)	Diuron (mg/kg)	DCPMU (mg/kg)	Glyphosate (mg/kg)	AMPA (mg/kg)	Triclopyr (mg/kg)
Soil	2018	Harvest area	0.012	nd	.022	.036	.081	0.61	.033
Soil	2023	Harvest area	0.013	nd	.006	.015	.12	0.94	nd

Type	Year	Area	DDT (mg/kg)	DDE (mg/kg)	Diuron (mg/kg)	DCPMU (mg/kg)	Glyphosate (mg/kg)	AMPA (mg/kg)	Triclopyr (mg/kg)
Soil	2023	Non Harvest area	0.048	.018	.006	.014	6.8	1.4	nd
Bulb	2023	Harvest area	nd	nd	nd	nd	nd	nd	nd

Oak release

Historically, Oregon white oak was an important food source and was maintained by fire in open savannas (Connolly 2000). With the reduction of prescribed fire in the Willamette Valley, Oregon white oaks were encroached by faster-growing Douglas-fir (*Pseudotsuga menziesii*) that can overtop the oak canopy. This overtopping eventually leads to the loss of Oregon white oaks, who cannot tolerate heavy shade.

To restore this culturally-important species, the CTGR silviculture crew removed approximately 100 encroaching Douglas-fir from Rattlesnake Butte and South Yamhill in 2018 and 2019, and in 2022 removed Douglas-fir from a former Christmas tree plantation at the Natural Resources Department to release existing Oregon white oak and expand the prairie. At Herbert Farm, a City of Corvallis contractor removed competing Douglas-fir from the Oregon white oak woodland, leaving some snags to create habitat diversity.

Prescribed fire

Prior to European settlement, indigenous peoples of the Willamette Valley used fire to tend a wide variety of culturally significant species. These burns involved multiple generations from children to elders and could be conducted on the scale of individual plants, such as burning basketry plants to make them grow straight shoots, to landscape scale to lure in game with tender new plant growth (Connolly 2000). This management over millennia resulted in the evolution of highly fire adapted ecosystems despite a lack of non-anthropogenic ignition sources, such as lightning, in the area. Forced removal of indigenous peoples from the landscape and bans against burning have resulted in habitat loss to encroaching native and invasive shrubs and trees.

One of the goals of the Plants for People project was to restore traditional indigenous management techniques to the landscape. Despite the known cultural and ecological importance of fire, it is currently difficult to implement fire on the landscape due to concerns over safety, air quality, and liability; strict regulations and weather restrictions; and limited staffing and resources to manage the burns. As a result, even tribally run burns tend to be carried out by National Wildfire Coordinating Group trained firefighters, rather than the traditional community-based model.

For the Plants for People project, the CTGR fire crew performed prescribed fire across 90 acres at Champoeg (Table 6). CTGR also burned Rattlesnake Prairie and used handheld propane torches to flame weed 2.5 acres at Tyee and approximately 0.1 acres of habitat patches at Thompson. The City of Corvallis Fire Department conducted a prescribed burn over a 2-acre area at Herbert Farm.

Table 6. Prescribed fire conducted as part of the Plants for People project.

Location	Date	Acres burned
Herbert Farm	September 2016	2
Champogeg	September 27, 2017	45
	October 2023	45
Rattlesnake Prairie	October 2023	73
	October 2024	73
Thompson	2019	0.1
Tyee	2022	1
Total		239.1 acres burned

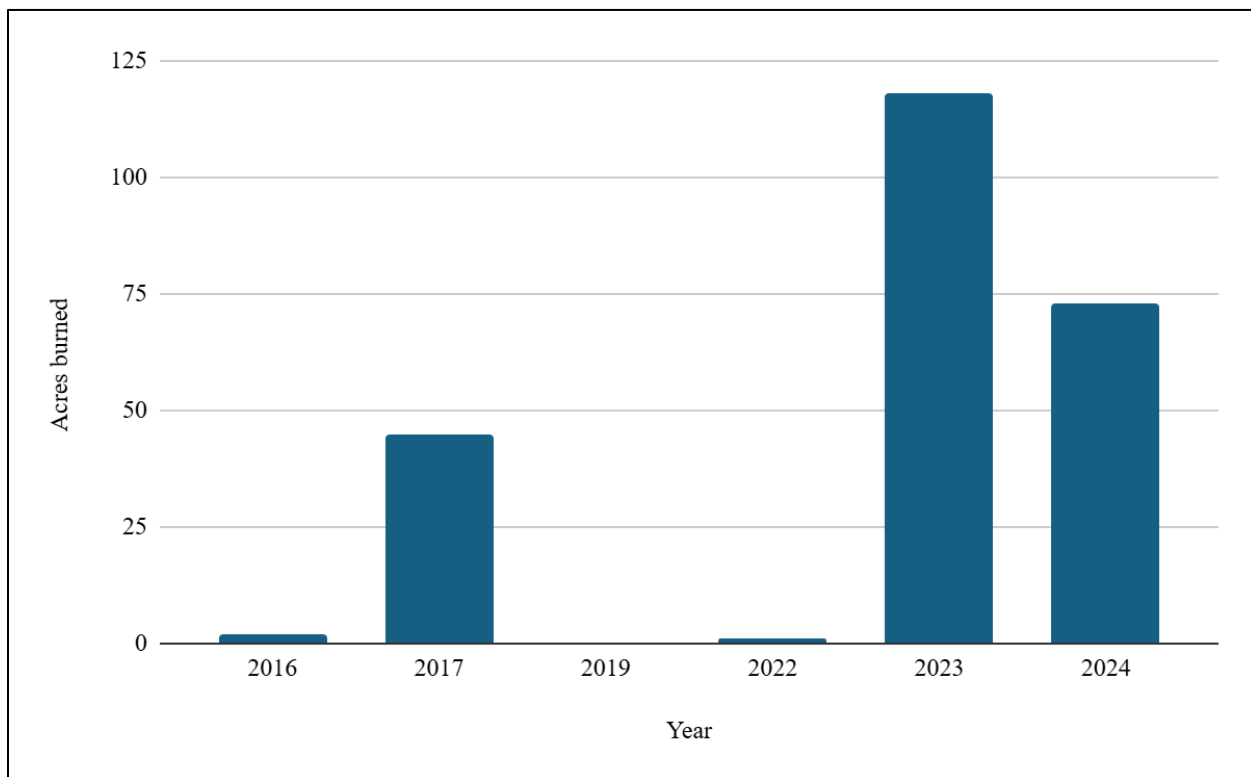


Figure 6. Acres burned as part of Plants for People Project.

5.2. Planting

One of the primary goals of the Plants for People project was to restore culturally significant foods to the landscape. This was done through sowing 3,060 pounds of seed (Table 7) and planting 65,747 bulbs and roots (Table 8).

Seeding

Seeds germinate best with high seed-to-soil contact, so IAE and CTGR eliminated vegetation before sowing. Portions of Herbert and Champoeg were placed into chemical fallow, where the vegetation was removed through herbicide applications. IAE then used a drill seeder and a hand-held belly bag to broadcast 2,881 lbs of seed (Table 7).

The herbicide-free harvest area at Champoeg, Thompson, and Tyee were all burned to remove vegetation. Burning provides additional benefits to germinating seeds by releasing additional nutrients through the soil that are used by new seedlings. CTGR hosted a staff event at Thompson including IAE to sow 71 pounds of seed (Table 7).

After CTGR removed Douglas-fir from the former Christmas tree plantation at NRD, staff burned wood piles and heavily seeded the newly-created prairie habitat with approximately 80 pounds of seed (Table 11). Additionally, CTGR and IAE sowed Nelson's checkermallow seed after creating bare ground through hand weeding. A complete list of species sown can be found in Appendix 1.

Table 7. Location and years of seeding.

Location	Year	Pounds of seed
Herbert Farm	2014	597.2
	2015	342.3
	2018	188.3
	2019	116.8
	2021	643.36
	2022	331.87
Champoeg	2015	92.8
	2016	121
	2017	184.99
	2018	41.34
	2021	196.02
	2023	30.62
Thompson	2019	17.05
	2023	24.63
	2024	26.85
Natural Resources Department	2023	52.89
	2024	26.8
South Yamhill	2023	10
	2024	11.1
Tyee	2023	4.12
	Total	3,060.40 pounds of seed

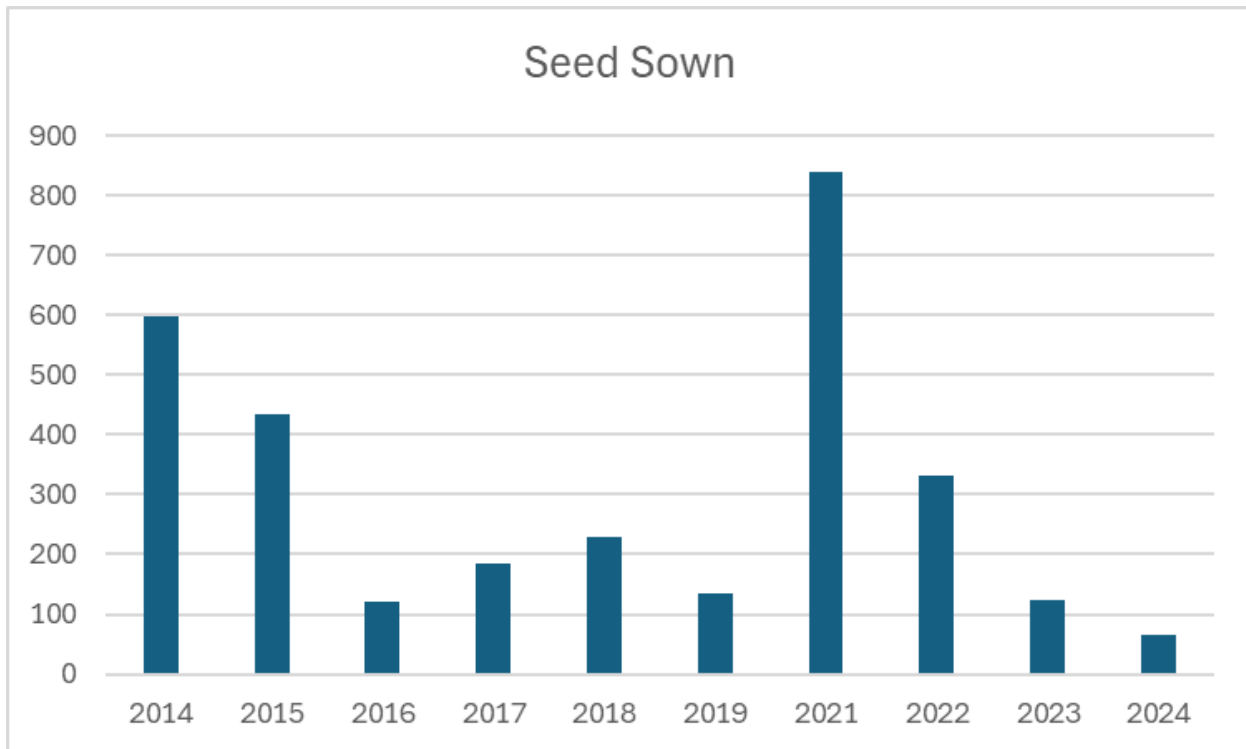


Figure 7. Seed sown by year.

Bulbs and bare roots

The benefit of planting bulbs and roots is that they bloom and establish quickly. This contrasts with seeds that, depending on the species, may require a period of cold temperatures to germinate (cold stratification), and in the case of camas seed, may take three years before producing flowers. However, due to their size, bulbs and roots are more time-intensive to plant and require staff time or volunteer events to get the plant materials into the ground quickly.

As the two largest sites, Herbert Farm and Champoeg received the largest quantity of plant materials, totaling 55,197 bulbs and roots. IAE and CTGR planted an additional 10,550 bulbs and roots at three tribal properties (Table 8). These were planted with the help of hundreds of volunteers (Figure 5) over several years and many planting events done in coordination with a variety of partners including IAE, CTGR, AmeriCorps, the City of Corvallis, Oregon Parks & Recreation Department, Newberg High School, Marion Polk Food Share, and many others.

Table 8. Locations and years of bulb and bare root plantings.

Location	Year	Bulbs & Bare Roots
Herbert Farm	2016	15,630
	2017	1,961
	2018	7,816

Location	Year	Bulbs & Bare Roots
	2019	9,350
	2020	3,000
	2021	2,715
Champoeg	2018	7,100
	2019	4,600
	2021	3,025
Thompson	2019	4,000
NRD	2021	2,700
	2023	3,000
Tyee	2022	850
Total		65,747 bulbs and bare roots

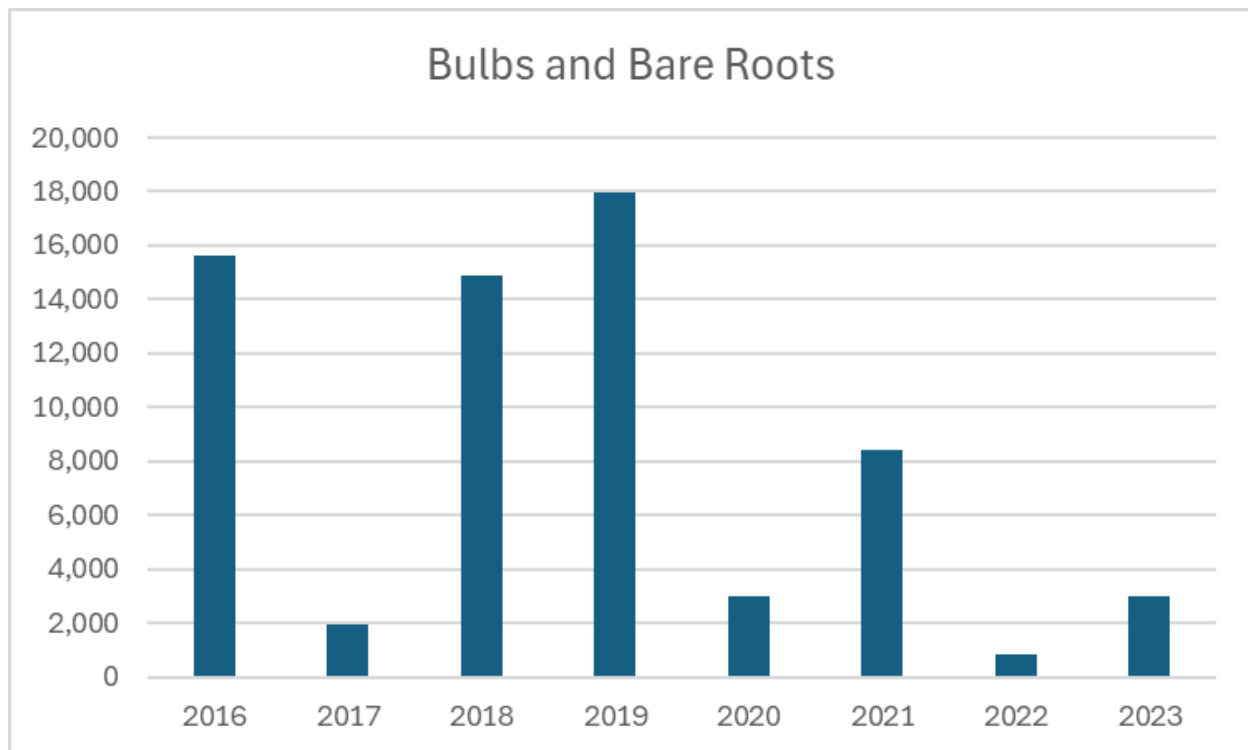


Figure 8: Bulbs and bare roots planted by year

5.3. Accomplishments

Champoeg State Heritage Area

In 2013, Champoeg was a grassland predominated by tufted hairgrass (*Deschampsia cespitosa*) without any flowering plants (Figure 8). By 2024, the prairie was transformed into a diverse native prairie with a mix of grasses and forbs (Figure 8). The prairie has established populations of culturally important species including Tolmie star-tulip (*Calochortus tolmiei*), camas (*Camassia* spp.), Virginia strawberry (*Fragaria virginiana*), toughleaf iris (*Iris tenax*), tarweed (*Madia* spp.), yampah (*Perideridia* spp.), and barestem biscuitroot. Champoeg also has a dedicated 2.5-acre herbicide-free harvest area that is maintained by hand weeding through regular volunteer events and is accessible to tribal members for gathering.



Figure 8. Champoeg State Heritage Area. First photopoint taken for the project on August 29, 2013 (left), last photopoint of project taken on June 13, 2024 (right). Photo credit: Andy Neill, Aynesley Wilson.

Herbert Farm and Natural Area

Herbert Farm was in active ryegrass production at the beginning of the Plants for People project in 2013 (Figure 9). That year the City of Corvallis ended the agricultural lease, and IAE staff began to transition the site into native prairie. As of 2024, the site has high native plant diversity with established populations of culturally significant plants including camas, tarweed, barestem biscuitroot, Tolmie star-tulip, and cow parsnip (*Heracleum lanatum*) (Figure 9).



Figure 9. Herbert Farm Natural Area. First photopoint take for the project on June 28, 2013 (left), and last photopoint taken on May 31, 2024 (right). Photo credit: Peter Moore.

South Yamhill

In 2017, when this site was added to the Plants for People Project, South Yamhill was predominated by Himalayan blackberry, Scotch broom, and Douglas-fir (Figure 10, Figure 11). By 2019, staff had restored open prairie habitat (Figure 11) through shrub and tree removal and have maintained the habitat through regular mowing (Figure 10). South Yamhill also saw an increase in Nelson's checkermallow by removing competing vegetation and decreasing invasive plant species.



Figure 10. South Yamhill. First photopoint taken for the project on September 6, 2017 (left), and last photopoint taken on June 13, 2024 (right). Photo credit: Peter Moore, Aynesley Wilson.



Figure 11. South Yamhill. Google Earth aerial from August 2016, before the project began (left), and July 2019 (right) after thinning. Photo credit: Google 2025 © Airbus.

Thompson

At Thompson, mature Scotch broom had overtaken much of the prairie prior to the start of the project in 2017 (Figure 12). The primary herbaceous cover was non-native pasture grasses reflecting the historical use of the property for grazing. In 2024, the site is an open prairie, with habitat patches containing culturally significant plants and native species such as narrowleaf mule's ears (*Wyethia angustifolia*), golden paintbrush (*Castilleja levisecta*), and Oregon sunshine (*Eriophyllum lanatum*). Thompson also has a 0.3-acre herbicide-free harvest area available to tribal members for gathering.



Figure 12. Thompson. First photopoint take for the project on July 6, 2017 (left), and last photopoint taken on June 13, 2024 (right). Photo credit: Peter Moore, Aynesley Wilson.

The first set of habitat plots were installed at Thompson in 2019. As of 2024, these habitat plots had considerably higher relative cover of native species, particularly native perennial forbs, compared to adjacent unplanted areas (Figure 13).

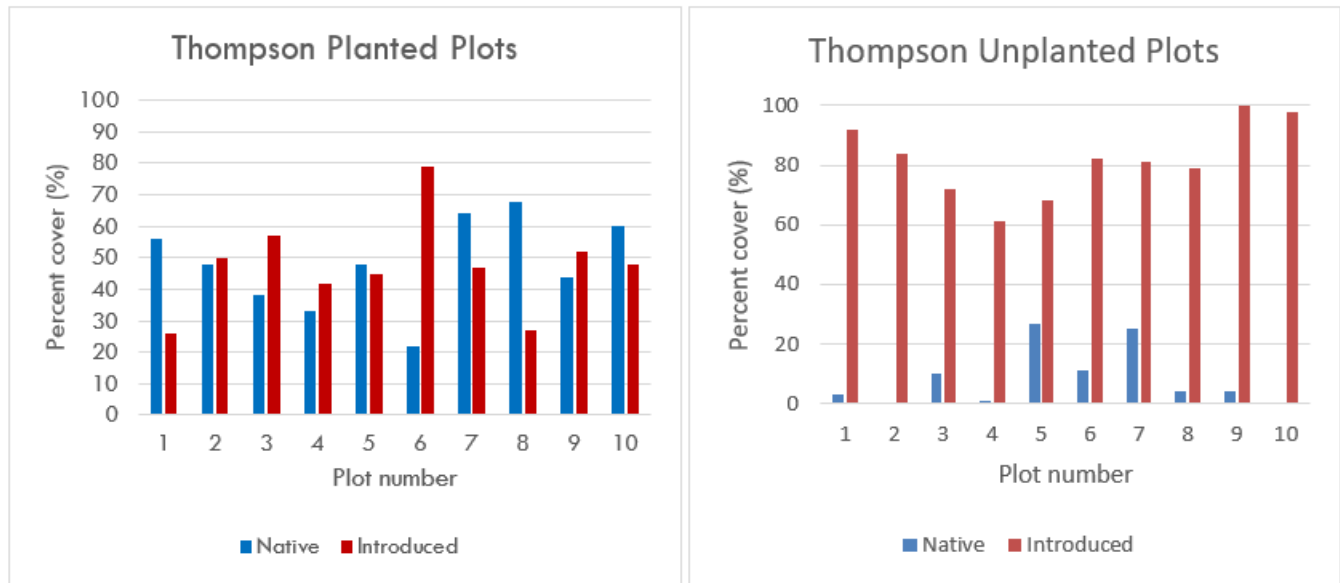


Figure 13: Relative vegetation cover comparison between habitat patches planted at Thompson in 2019 (left) and adjacent unplanted areas (right). Based on 1m² quadrat sampling completed in 2024.

Diversity was also considerably higher in planted areas, with planted areas having an average of 20 species detected per 1m² while unplanted areas averaged 11 species detected (Figure 14).

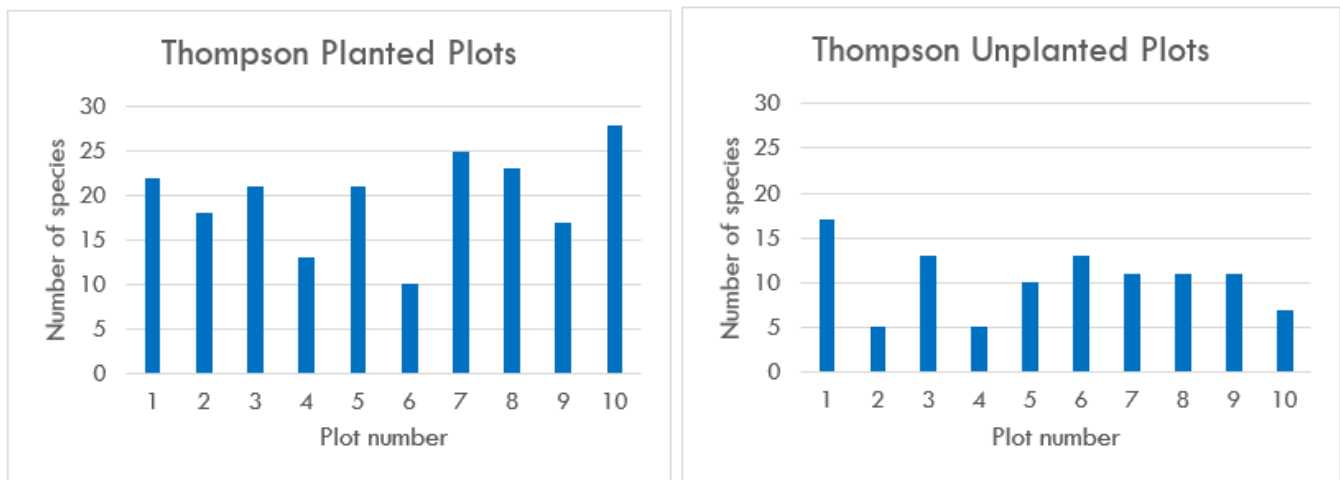


Figure 14. Diversity of planted (left) vs. unplanted plots (right) at Thompson. Based on 1m² quadrat sampling completed in 2024.

Planted areas had significantly higher cover of Oregon sunshine, yarrow (*Achillea millefolium*), and rose checkermallow (*Sidalcea malviflora*) (Figure 15). Apart from wild strawberry (*Fragaria virginiana*), which occurs naturally across the site, we recorded many culturally significant species including large camas, yampah, barestem biscuitroot, narrowleaf onion (*Allium amplexans*), and ookow (*Dichelostemma congesta*) in the planted areas, but were not yet at densities that would support sustainable harvesting.

Habitat areas that were planted in 2023 had high densities of multiple tarweed species in 2024, though species compositions are expected to change over time as perennial species become more established.



Figure 15: Habitat plot at Thompson with yellow Oregon sunshine (*Eriophyllum lanatum*) standing out against surrounding vegetation. Photo taken June, 13 2024. Photo credit: Anna Ramthun. Right: Close (left). Close up of habitat plot with rose checkermallow (*Sidalcea malviflora*), narrowleaf mule's ears (*Wyethia angustifolia*). Photo taken May 4, 2023. Photo credit: Sara Alaica (right).

Rattlesnake Butte

By 2017, the historic oak savanna at Rattlesnake Butte had begun to transition into a Douglas-fir dominated forest with a shrub understory (Figure 16). After removing conifers and restoring a fire regime, 2023 aerial photography shows the restoration of oak savanna at Rattlesnake Butte and the increase in prairie habitat (Figure 16).

The western unit of Plants for People at Rattlesnake Butte was also included in another OWEB grant to reintroduce prescribed fire across 80 acres of the Rattlesnake Butte property (000-0000-19641). This unit was burned in October of 2023 and 2024 and was reseeded following burning in 2023. Notable observations between 2022 and 2025 are a 12% decrease in introduced species cover, and a more than doubling of native species cover (Figure 17).

The largest increase in native cover was from native annual forbs such as grassy tarweed (*Madia gracilis*) and coast tarweed that increased by 10%. There was also a general reduction in thatch and vegetation cover. We observed an increase in native cover in 2024, which declined again by monitoring in 2025. This may reflect differences in burn severity, as the 2023 burn was patchier due to recent rains, whereas 2024 had more consistent fuels consumption (Figure 18).

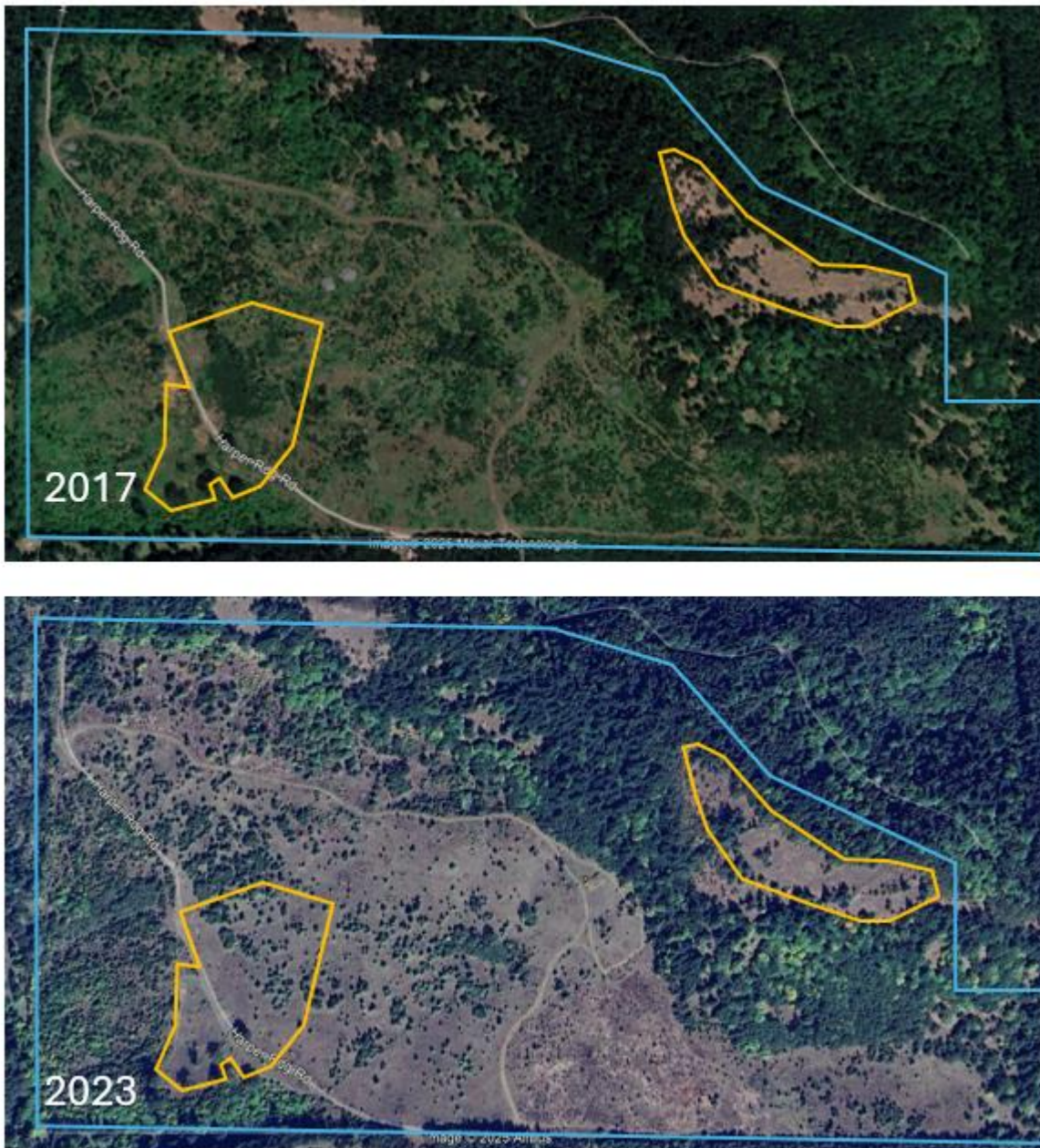


Figure 16. Rattlesnake Butte in July 2017 (top), and after management in October 2023 (bottom). The property is outlined in blue, and the Plants for People project areas are outlined in orange. Photo credit: Google © 2025 Maxar Technologies © 2025 Airbus.

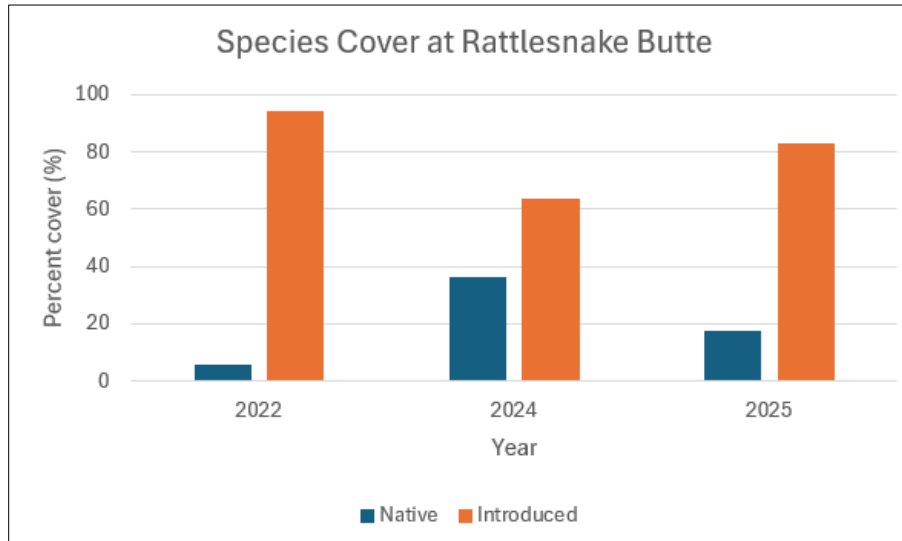


Figure 17. Percent species cover at Rattlesnake Butte.

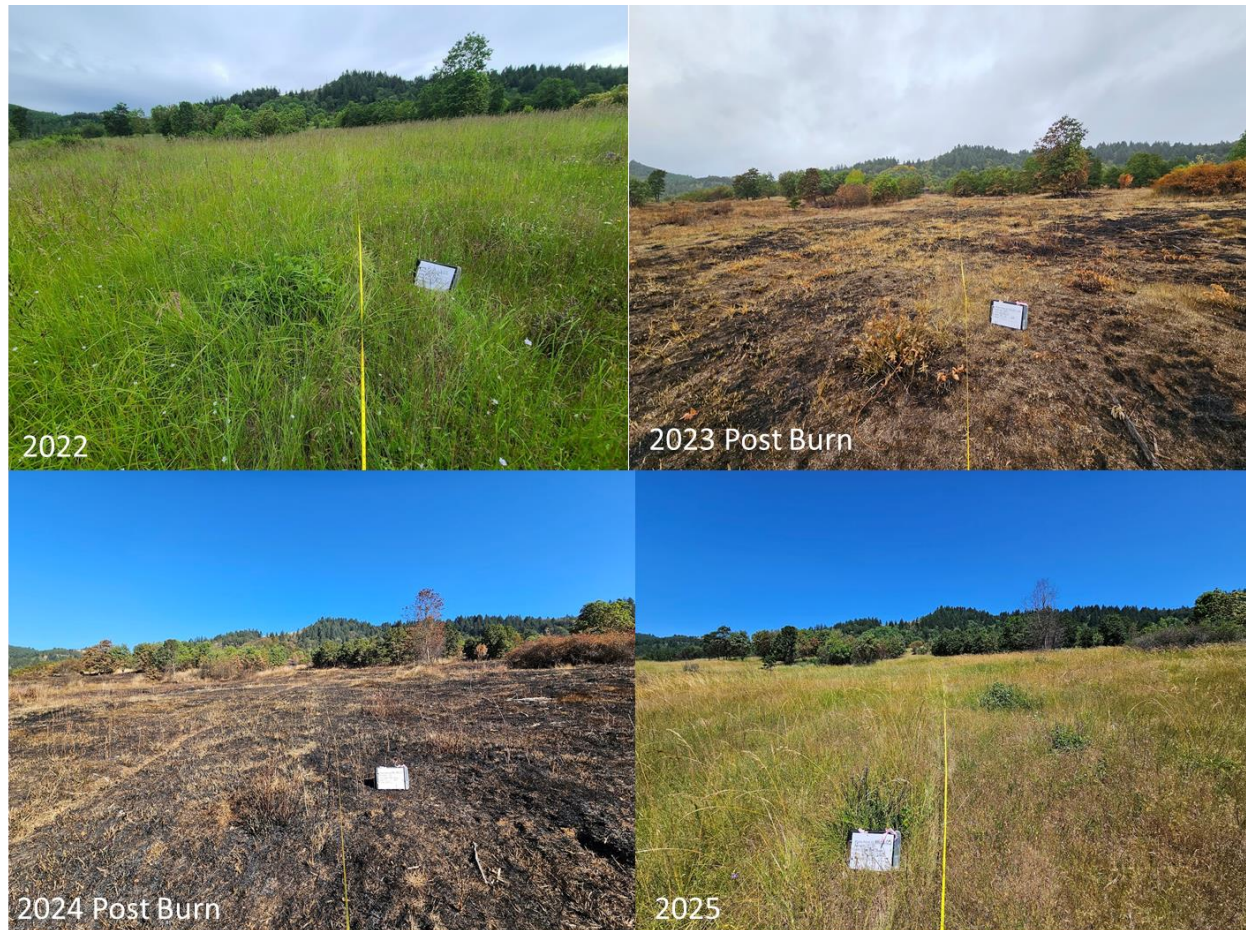


Figure 18: Rattlesnake Butte. First photopoint taken for fire effects monitoring on June 3, 2022 (upper left), post fire photos taken on October 11, 2023 and October 10, 2024, last photo on June 6, 2025 (lower right). Photo credit: Anna Ramthun.

Tyee Nature Preserve

Restoration at the Tyee Nature Preserve was a direct precursor to the Plants for People project. Conversations around incorporating culturally significant species into restoration efforts for Nelson's checkermallow, were a catalyst for efforts to increase cultural plant materials production. While most of the restoration was completed prior to the start of the Plants for People grant, by 2021 the site needed minor upkeep, including removal of Scotch broom, mowing of oxeye daisy (*Leucanthemum vulgare*), and reintroduction of disturbance through mowing and flame weeding (Figure 19).



Figure 19. Scotch broom at Tyee, May 19, 2020. Photo credit: Peter Moore (left). Oregon sunshine (*Eriophyllum lanatum*) in bloom at Tyee, June 13, 2024. Photo credit: Anna Ramthun (right).

In 2022, CTGR conducted vegetation sampling at Tyee, which reflected good retention of native species (Figure 20). Dominant species included Oregon sunshine, Oregon cinquefoil (*Potentilla gracilis*), common selfheal (*Prunella vulgaris*), and Nootka rose (*Rosa nutkana*).

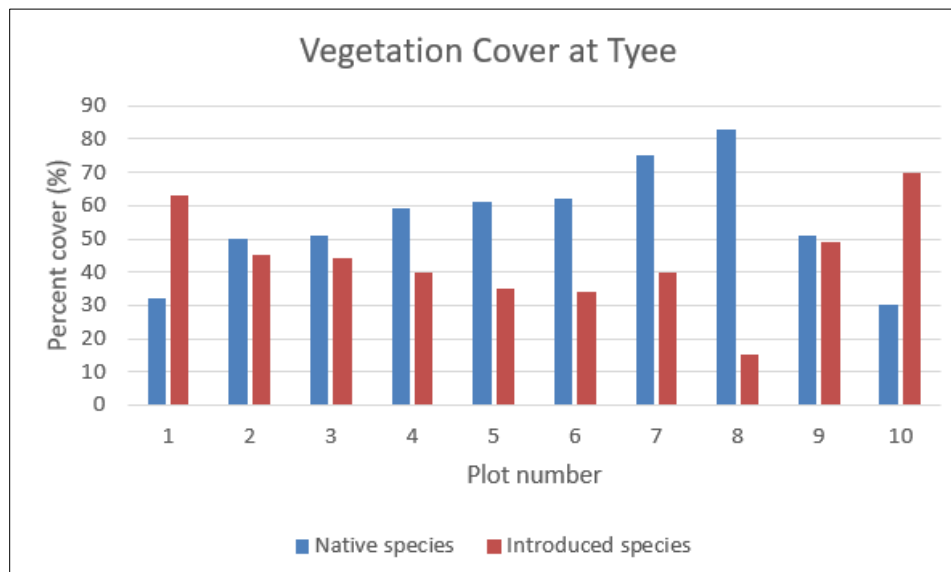


Figure 20: 2022 vegetation composition for Tyee Nature Preserve. Based on 1m² quadrat sampling.

Natural Resources Department

At the Natural Resources department, the Plants for People Project allowed for the creation of a 0.15-acre pollinator hedgerow and an 0.95-acre prairie area in 2020. At the start of the project, the site was composed primarily of introduced species, and after planting and thinning, has been restored to native prairie (Figure 21, Figure 22).



Figure 21. Natural Resources Department. First photopoint taken for the project on June 10, 2021 (left), and last photopoint taken on June 13, 2024 (right). Photo credit: Peter Moore, Aynesley Wilson.



Figure 22. Natural Resource Department in July 2019 (left), and after treatment in September 2023 (right). Google © 2025 Airbus.

Monitoring in 2023 of planted and unplanted plots at the Natural Resources department showed higher cover of native species, particularly native perennial forbs and graminoids (Figure 23). Roemer's fescue,

Oregon sunshine, coast tarweed, common selfheal, and rose checkermallow were well represented in planted areas. Culturally significant species including large camas, yampah, barestem biscuitroot, narrowleaf onion (*Allium amplexans*), and ookow (*Dichelostemma congesta*) were recorded in many of the planted areas but were not yet at densities that would support sustainable harvesting.

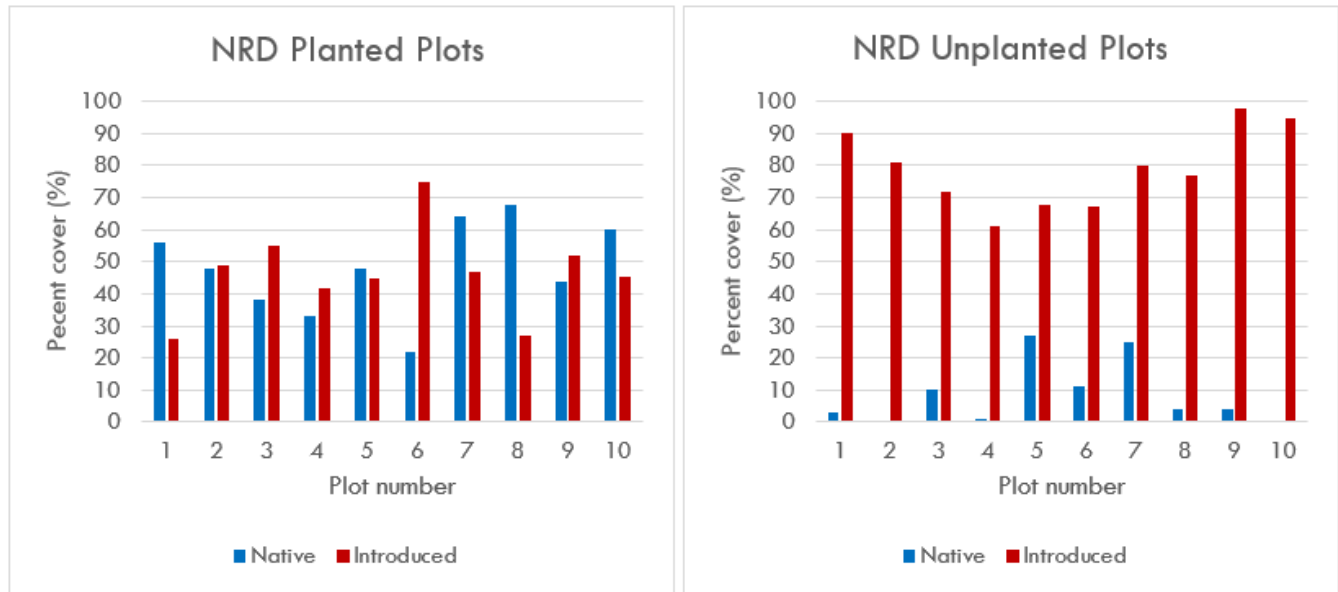


Figure 23: Relative vegetation cover comparison between habitat patches planted at the Natural Resources Department in 2020 (left) and adjacent unplanted areas (right). Based on 1m² quadrat sampling.

Tribal native plant nursery

Over the course of the Plants for People project, the tribal native plant nursery has grown from a few raised beds producing bulbs, to a thriving community hub sharing resources and educating the public about culturally significant plants (Figure 24). In 2016, plant materials produced by the nursery were used exclusively for restoration and landscaping on tribal lands, but capacity has increased to include a wider variety of species and uses.

Between 2016 and 2024 the nursery made a total of 86 distributions, either sales or donations, to 59 unique entities (Figure 25). Of these 41% were for cultural use, 29% went to restoration projects, 26% went to landscaping projects, and 4% went toward native plant sales for local soil and water conservation districts. Plant materials representing restoration and landscaping projects were introduced to at least 41 unique locations. Overall, 58% of plant distributions stayed within the Grand Ronde Community.



Figure 24. Evolution of the tribal native plant nursery, clockwise from top right: Installation of wooden raised beds (2014); informational sign (2017); nursery manager with willow stakes (2021); deer fencing (2021); container plantings (2022); nursery assistant leading a tour with newly installed metal raised beds (2024).

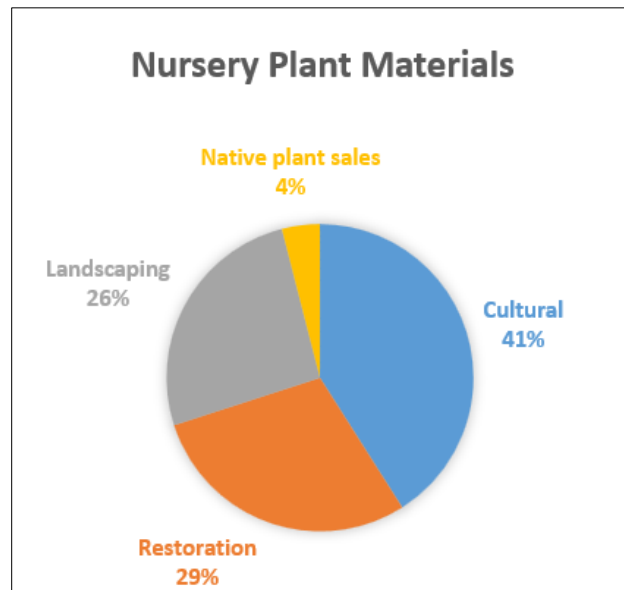


Figure 25. How native plant materials grown at the tribal native plant nursery were used, 2016-2024.

Outside of the Grand Ronde Community, partners in Portland, Lincoln City, Eugene, and Stayton, among others, are now planting bulbs, roots, cuttings, containers, and seed grown by the nursery to establish new populations of culturally significant plants throughout the Willamette Valley.

In addition to plant materials distribution, outreach activities at the nursery have significantly expanded since 2016. In 2016, the nursery manager held six events on site, and by 2024 this had expanded to over 200 events including tours, classes, volunteer events, field trips, and presentations (Figure 26).

Between 2016 and 2024 the nursery hosted 221 outreach events including: 84 tours, 47 school field trips, 38 volunteer days, 27 presentations, participation in 20 conferences and workshops, and 5 consultations. Participants included 162 organizations, representing 55 cities in Oregon and beyond. These organizations also include 62 from the local community. Outreach participants include Soil and Water Conservation Districts, federal agencies such as the Natural Resources Conservation Service (NRCS), tribal entities, school groups, and universities. Participants visit the nursery to learn about culturally significant plants and traditional management practices. At the end of 2024 the nursery estimated they received an average of 500 visitors per year.

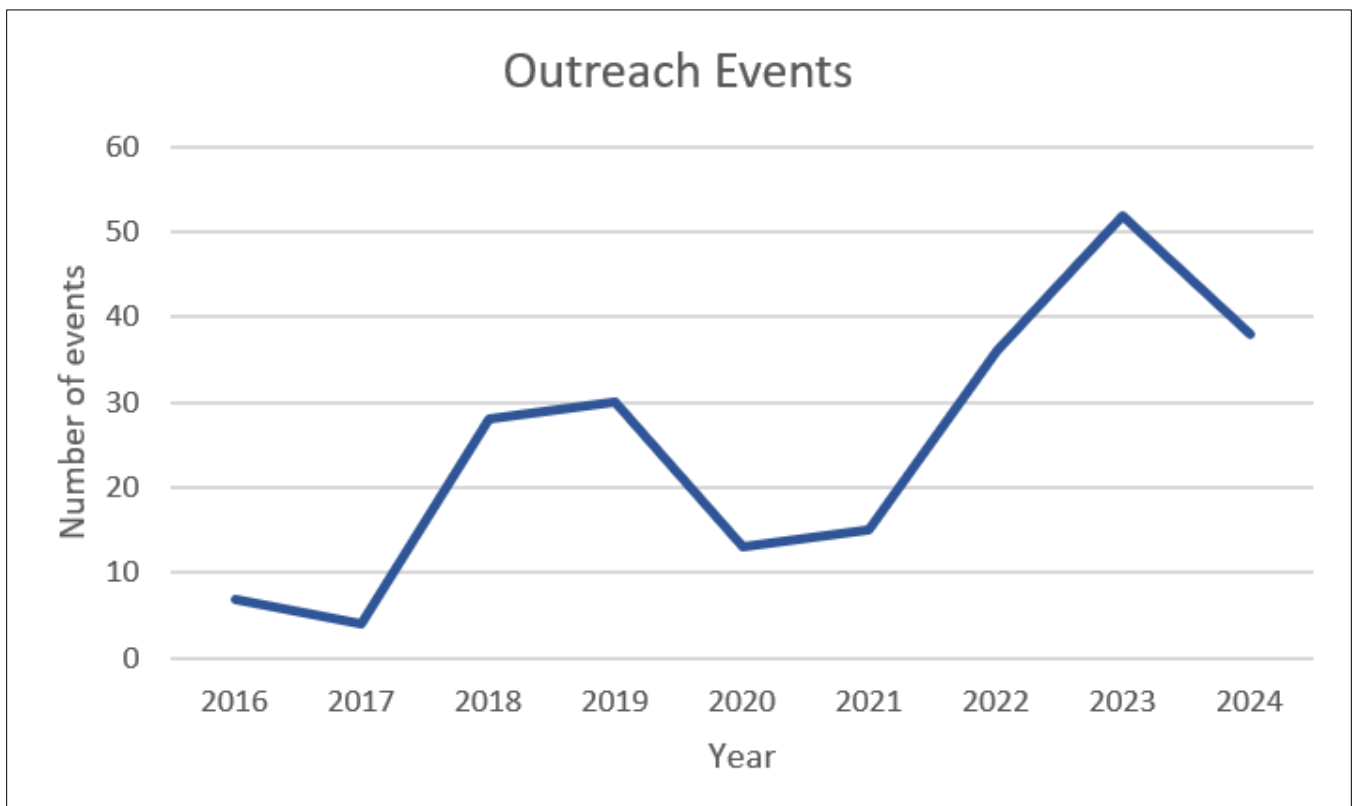


Figure 26. Number of outreach events conducted at the tribal native plant nursery, 2016-2024.

Prior to 2022 the nursery was not allowed to utilize volunteers due to an internal policy. However, since changing that policy, the nursery has hosted over 400 volunteers through 38 events. Many of the volunteer events invite participants to cultivate and harvest plant materials, providing hands-on opportunities for the public, including tribal members, to learn and share knowledge of Indigenous

management practices. The nursery has also developed a core of 13 regular “drop-in” volunteers, two of who are college students receiving course credit.

In addition to volunteer opportunities, the nursery has also created employment opportunities for community youth. The program has hosted 10 summer youth employees since its establishment. These students participate in many aspects of nursery management including plant care, weeding, and seed collection and cleaning. The program has also hosted one pathways intern through the Bureau of Indian Affairs (BIA), this college student interned with the program for eight months.

Cultural use of plants and sites

Out of respect for the privacy of cultural users of sites and species, data on these parameters were not closely tracked.

Approximately 41% of plant distributions from the nursery went towards cultural uses, including use as first foods, medicines, crafts, ceremonial items, and cultural education purposes. A cultural event, including a bulb cooking demonstration, was combined with a planting event at Champoege in 2018.

Thus far most of the sites restored under this project are still becoming established. Many culturally significant species included in restoration sites for the Plants for People Project are bulb and root species that take many years to mature. Narrowleaf onion, for example, can take 1 to 3 years to produce flowers and seeds, depending on if it is planted as bulbs or from seed. Common camas (*Camassia quamash*) can take 3 to 5 years to produce seed or mature into bulbs large enough for consumption. Due to this slow maturation, it may take several more years for planted populations to support sustainable harvesting.

One exception is coast tarweed. As an early seral, annual species, it is usually at its highest density shortly after seeding. This density has allowed for seed collection at multiple restoration sites.

6. CONCLUSION

Over the ten years of the Plants for People project, the Oregon Watershed Enhancement Board funding has restored and enhanced 178 acres of native habitat, created 6.3 acres of herbicide-free harvest areas, and established a tribal native plant nursery. The nursery has produced 83 pounds of native seed and 97,952 bulbs, roots, containers and cuttings for use in restoration projects throughout the Willamette Valley. It has also become a place of gathering for hundreds of people every year, with the nursery leading 221 events over the life of the project.

Through events and project partnerships, Plants for People has brought communities together to restore First Foods back to the landscape. Over 300 volunteers helped plant 3,060 pounds of seed and 65,747 bulbs and roots of culturally significant plants. Traditional ecological management practices were also restored to the landscape, with the prescribed burning of 239 acres of native prairie.

Improving the availability and abundance of First Foods on the landscape will be an ongoing goal to work towards. It will require the public to use their purchasing power to demand more availability of native plants; for natural resource managers to make spaces available for food gathering; for plant producers to grow and supply more First Foods; and for public agencies to make space for the use of traditional ecological management practices. The Plants for People project was an important step in this process and will hopefully inspire future practitioners to continue this important work.

References

Connolly, T.J., 2000, June. Anthropological and archaeological perspectives on native fire management of the Willamette Valley. In *81st Annual Meeting of the American Association for the Advancement of Science, Pacific Division (Symposium: Fire History in the Pacific Northwest: Human and Climatic Influences)*.

APPENDIX 1. PLANT LISTS

Table A. Culturally significant species

Form	Common name	Scientific name	Cultural Use
Forbs	tapertip onion	<i>Allium acuminatum</i>	food
	narrowleaf onion	<i>Allium amplexans</i>	food
	crown brodiaea	<i>Brodiaea coronaria</i>	food
	subalpine mariposa lily	<i>Calochortus subalpinus</i>	food
	Tolmie star-tulip	<i>Calochortus tolmiei</i>	food, medicine
	large camas	<i>Camassia leichtlinii</i>	food
	Virginia strawberry	<i>Fragaria virginiana</i>	food
	cow parsnip	<i>Heracleum lanatum</i>	food, medicine, dye
	toughleaf iris	<i>Iris tenax</i>	cordage
	barestem biscuitroot	<i>Lomatium nudicaule</i>	food, medicine, ceremony
	common madia	<i>Madia elegans</i>	food
	mountain tarweed	<i>Madia glomerata</i>	food
	grassy tarweed	<i>Madia gracilis</i>	food
	coast tarweed	<i>Madia sativa</i>	food
	Gairdner's yampah	<i>Perideridia gairdneri</i>	food, medicine
	Oregon yampah	<i>Perideridia oregana</i>	food
	wapato	<i>Sagittaria latifolia</i>	food
	yerba buena	<i>Satureja douglasii</i>	medicine
	white brodiaea	<i>Triteleia hyacinthina</i>	food
	stinging nettle	<i>Urtica dioica</i>	medicine, food, cordage
Graminoids	common rush	<i>Juncus effusus</i>	weaving
Shrubs	vine maple	<i>Acer circinatum</i>	tools, cooking stakes, fiber

Form	Common name	Scientific name	Cultural Use
	serviceberry	<i>Amelanchier alnifolia</i>	food
	redosier dogwood	<i>Cornus sericea</i> ssp. <i>occidentalis</i>	medicine, smoking, dye
	California hazelnut	<i>Corylus cornuta</i>	food, weaving, medicine
	ocean spray	<i>Holodiscus discolor</i>	medicine, tools, weapons
	Oregon grape	<i>Mahonia aquifolium</i>	food, medicine
	osoberry	<i>Oemleria cerasiformis</i>	food, tea, anesthetic
	Pacific ninebark	<i>Physocarpus capitatus</i>	food, medicine, dye, arrows
	Oregon white oak	<i>Quercus garryana</i>	food
	cascara	<i>Rhamnus purshiana</i>	medicine
	Nootka rose	<i>Rosa nutkana</i>	food, medicine, crafts
	thimbleberry	<i>Rubus parviflorus</i>	food, medicine
	salmonberry	<i>Rubus spectabilis</i>	food
	Pacific willow	<i>Salix lucida</i>	medicine, fiber, tools
	Douglas spiraea	<i>Spiraea douglasii</i>	tea, brooms, cooking tools
	snowberry	<i>Symphoricarpos albus</i>	medicine, soap, arrows
Trees	red alder	<i>Alnus rubra</i>	dye, medicine
	white alder	<i>Alnus rhombifolia</i>	medicine
	Oregon ash	<i>Fraxinus latifolia</i>	tools, basketry
	Lewis' mock orange	<i>Philadelphus lewisii</i>	tools, arrows, furniture, soap
	black cottonwood	<i>Populus trichocarpa</i>	medicine, firewood, rope, traps, basketry, structures
	Pacific yew	<i>Taxus brevifolia</i>	Tools, arrows, digging sticks, bows, fiber
	Western red cedar	<i>Thuja plicata</i>	planks, canoes, weaving

Table B: Species grown at the tribal native plant nursery, 2014-2024

Common	Scientific
big-leaf maple	<i>Acer macrophyllum</i>
narrowleaf onion	<i>Allium amplexans</i>
California mugwort	<i>Artemisia douglasiana</i>
white sagebrush	<i>Artemisia ludoviciana</i>
coyote bush	<i>Baccharis pilularis</i>
crown brodiaea	<i>Brodiaea coronaria</i>
Tolmie star-tulip	<i>Calochortus tolmiei</i>
large camas	<i>Camassia leichtlinii</i>
common camas	<i>Camassia quamash</i>
yerba buena	<i>Clinopodium douglasii</i>
grand collomia	<i>Collomia grandiflora</i>
redosier dogwood	<i>Cornus sericea</i>
beaked hazelnut	<i>Corylus cornuta</i>
forktooth ookow	<i>Dichelostemma congestum</i>
Virginia strawberry	<i>Fragaria virginiana</i>
cow parsnip	<i>Heracleum lanatum</i>
ocean spray	<i>Holodiscus discolor</i>
toughleaf iris	<i>Iris tenax</i>
fernleaf biscuitroot	<i>Lomatium dissectum</i>
barestem biscuitroot	<i>Lomatium nudicaule</i>
coast tarweed	<i>Madia sativa</i>
Oregon grape	<i>Mahonia aquifolium</i>
Pacific crabapple	<i>Malus fusca</i>
Indian tobacco	<i>Nicotiana quadrivalvis</i>

Common	Scientific
osoberry	<i>Oemleria cerasiformis</i>
Gardner's yampah	<i>Perideridia gairdneri</i>
Oregon yampah	<i>Perideridia oregana</i>
Lewis' mock orange	<i>Philadelphus lewisii</i>
Pacific ninebark	<i>Physocarpus capitatus</i>
ponderosa pine	<i>Pinus ponderosa</i> var. <i>W</i>
common selfheal	<i>Prunella vulgaris</i>
Oregon white oak	<i>Quercus garryana</i>
cascara	<i>Rhamnus purshiana</i>
spreading gooseberry	<i>Ribes divaricatum</i>
red flowering currant	<i>Ribes sanguineum</i>
swamp rose	<i>Rosa palustris</i>
thimbleberry	<i>Rubus parviflorus</i>
salmonberry	<i>Rubus spectabilis</i>
dune willow	<i>Salix hookeriana</i>
Pacific willow	<i>Salix lucida</i>
Scouler's willow	<i>Salix scouleri</i>
blue elderberry	<i>Sambucus caerulea</i>
rose spirea	<i>Spiraea douglasii</i>
snowberry	<i>Symphoricarpos albus</i>
hyacinth brodiaea	<i>Triteleia hyacinthina</i>

Table C: Complete list of plant species sown and planted as part of the Plants for People project

Common	Scientific
Alaska brome	<i>Bromus sitchensis</i>
American bird's-foot trefoil	<i>Acemispom americanus</i>
American sloughgrass	<i>Beckmannia syzigachne</i>
barestem biscuitroot	<i>Lomatium nudicaule</i>
big bluegrass	<i>Poa secunda</i>
bigleaf lupine	<i>Lupinus polyphyllus</i>
blue wildrye	<i>Elymus glaucus</i>
bluehead gilia	<i>Gilia capitata</i>
broadleaf lupine	<i>Lupinus latifolius</i>
California brome	<i>Bromus carinatus</i>
California mugwort	<i>Artemisia douglasiana</i>
California oatgrass	<i>Danthonia californica</i>
chamisso sedge	<i>Carex pachystachya</i>
cluster tarweed	<i>Madia glomerata</i>
coast tarweed	<i>Madia sativa</i>
common camas	<i>Camassia quamash</i>
common rush	<i>Juncus effusus</i>
common selfheal	<i>Prunella vulgaris var. lanceolata</i>
common yarrow	<i>Achillea millefolium</i>
cow parsnip	<i>Heracleum maximum</i>
creeping spikerush	<i>Eleocharis palustris</i>
crown brodiaea	<i>Brodiaea coronaria</i>
dense sedge	<i>Carex densa</i>
denseflower willowherb	<i>Epilobium densiflorum</i>

Common	Scientific
dwarf checkermallow	<i>Sidalcea malviflora</i> ssp. <i>Virgata</i>
elegant calicoflower	<i>Downingia elegans</i>
farewell to spring	<i>Clarkia amoena</i> ssp. <i>lindleyi</i>
fernleaf biscuitroot	<i>Lomatium dissectum</i>
forktooth ookow	<i>Dichelostemma congestum</i>
fragrant popcornflower	<i>Plagiobothrys figuratus</i>
Gairdner's yampah	<i>Perideridia gairdneri</i> ssp. <i>borealis</i>
golden paintbrush	<i>Castilleja levisecta</i>
grand collomia	<i>Collomia grandiflora</i>
grassy tarweed	<i>Madia gracilis</i>
green-sheath sedge	<i>Carex feta</i>
hairy purslane speedwell	<i>Veronica peregrina</i> var. <i>xalapensis</i>
harvest brodiaea	<i>Brodiaea elegans</i>
hyacinth brodiaea	<i>Triteleia hyacinthina</i>
Idaho blue-eyed grass	<i>Sisyrinchium idahoense</i>
june grass	<i>Koeleria macrantha</i>
Kincaid's lupine	<i>Lupinus oreganus</i>
large-flowered blue-eyed Mary	<i>Collinsia grandiflora</i>
lateral sedge	<i>Carex unilateralis</i>
Lemmon's needlegrass	<i>Achnatherum lemmonii</i>
meadow barley	<i>Hordeum brachyantherum</i>
meadow checkermallow	<i>Sidalcea campestris</i>
narrowleaf mule's ears	<i>Wyethia angustifolia</i>
narrowleaf onion	<i>Allium amplexans</i>
Nelson's checkermallow	<i>Sidalcea nelsoniana</i>

Common	Scientific
Oregon geranium	<i>Geranium oreganum</i>
Oregon sunshine	<i>Eriophyllum lanatum</i>
Oregon yampah	<i>Perideridia oregana</i>
ovoid spikerush	<i>Eleocharis ovata</i>
Pacific woodrush	<i>Luzula comosa</i>
peacock larkspur	<i>Delphinium pavonaceum</i>
pointed-broom sedge	<i>Carex scoparia</i>
poverty rush	<i>Juncus tenuis</i>
Puget Sound gumweed	<i>Grindelia integrifolia</i>
river lupine	<i>Lupinus rivularis</i>
Roemer's fescue	<i>Festuca roemeri</i>
saw-beaked sedge	<i>Carex stipata</i>
seep monkeyflower	<i>Mimulus guttatus</i>
shortawn foxtail	<i>Alopecurus aequalis</i>
shortspur seablush	<i>Plectritis congesta</i>
showy milkweed	<i>Asclepias speciosa</i>
showy tarweed	<i>Madia elegans</i>
slender cinquefoil	<i>Potentilla gracilis</i>
slender phlox	<i>Microsteris gracilis</i>
slough sedge	<i>Carex obnupta</i>
small fruited bulrush	<i>Scirpus microcarpus</i>
small-flowered lupine	<i>Lupinus polycarpus</i>
softstem bulrush	<i>Schoenoplectus tabernaemontani</i>
spike bentgrass	<i>Agrostis exarata</i>
splitawn sedge	<i>Carex tumulicola</i>

Common	Scientific
spreading rush	<i>Juncus patens</i>
spring gold	<i>Lomatium utriculatum</i>
stinky cinquefoil	<i>Potentilla glandulosa</i>
straight beaked buttercup	<i>Ranunculus orthorhynchus</i>
tall camas	<i>Camassia leichtlinii</i> var. <i>suksdorfii</i>
tall meadow-rue	<i>Thalictrum polycarpum</i>
tapertip onion	<i>Allium acuminatum</i>
toad rush	<i>Juncus bufonius</i>
Tolmie's star tulip	<i>Calochortus tolmiei</i>
tough leaf iris	<i>Iris tenax</i>
true babystars	<i>Leptosiphon bicolor</i>
tufted hairgrass	<i>Deschampsia cespitosa</i>
water foxtail	<i>Alopecurus geniculatus</i>
western buttercup	<i>Ranunculus occidentalis</i>
western columbine	<i>Aquilegia formosa</i>
western goldenrod	<i>Solidago lepida</i> var. <i>salebrosa</i>
western rush	<i>Juncus occidentalis</i>
western yellowcress	<i>Rorippa curvisiliqua</i>
wild strawberry	<i>Fragaria virginiana</i>
willow dock	<i>Rumex salicifolius</i>
winecup clarkia	<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>
woodland strawberry	<i>Fragaria vesca</i>