

2022 Rare Plant Monitoring and Seed Collecting Annual Report

Washington Rare Plant Care & Conservation

SUMMARY

Community science volunteers were busy and successful in the 2022 field season, monitoring rare plants and collecting seeds across Washington State. Over 100 volunteers monitored and contributed sighting reports on 153 populations, well exceeding our goal of 130 populations monitored annually. These included 29 potentially new populations, more than four times the typical number of new populations found each year, and breaking our 2009 record of 14 new populations.

Of the 129 populations assigned and attempted, volunteers found the target species at 66 sites (53% of the sites). In addition, five volunteers were unable to reach their site because of challenging terrain or access constraints. For these sites, volunteers provided reports that included valuable access information for future surveyors.

This year, Rare Care offered a hybrid monitoring training format which allowed volunteers to participate via Zoom and in-person. Training participants included 38 new volunteers and 14 returning volunteers. We focused on recruiting volunteers in less populated areas in eastern Washington. Two in-person trainings were offered that focused on field skills and seed collecting. A total of 23 volunteers participated in these.

We also hosted our annual monitoring weekend this year in Klickitat County with 23 volunteers joining us over the weekend. We were joined by staff from the Washington Department of Natural Resources (DNR) and Gifford Pinchot National Forest.



Amy Dawley, Anna Carragee and Joanna Long searching for branching montia (*Montia diffusa*). Photo: Mark Stone

SEASON SYNOPSIS

Rare plant monitoring followed a familiar pattern across the field season: starting in the southern reaches of the state at low elevations, progressing northward, and finally reaching the high elevations later in the summer. Successful hunts in March for early blooming species, such as Rollin’s desert-parsely (*Lomatium rollinsii*) and two populations of Hoover’s biscuitroot (*Lomatium lithosolamans*), provided a strong start to the season. Mid-April, Ronald Toonen made the first new find of the year, a population of giant-chain fern (*Woodwardia fimbriata*). In total, volunteers completed 18 monitoring visits in March and April.

As usual, the heart of the monitoring season occurred from May through August. During these four months, volunteers completed 121 field visits across the state. Volunteers made excellent progress monitoring more populations of Rare Care-designated focus species including sagebrush Mariposa lily (*Calochortus macrocarpus* var. *maculosus*), snow cinquefoil (*Potentilla nivea*), and Wenatchee larkspur (*Delphinium viridescens*).

In mid-June, Rare Care held its annual monitoring weekend in Klickitat County. Rare Care volunteers and staff, DNR staff, and Forest Service staff spent three days revisiting known occurrences of rare plants in the Trout Lake region. Our focus was on DNR Natural Area Preserves and Natural Resources Conservation Areas, but we also visited sites on National Forests and private lands. This region is home to many very high-quality seasonally wet meadows, vernal pools, and swales that support many species found nowhere else in the state. Over the long weekend, the group documented 21 rare plant populations, including relocating 10 previously documented populations, finding seven new populations, and conducting one general survey. We also searched for but could not relocate three other populations.



Top: Snow cinquefoil (*Potentilla nivea*), a 2022 focus species.

Photo: Julia Bent

Bottom: Kalama Reuter and Teddy Pierson in the morning group circle during the monitoring weekend. Photo: Mark Stone

For more details see the Monitoring Weekend Summary Report: bit.ly/TroutLakeWknd



2022 season Rare Care staff (left to right): Alexandra Howell, Anna Carragee, Wendy Gibble, and Ethan Greer. Photo: Molly Jennings

SEASON SYNOPSIS CONTINUED

Volunteers also conducted several botanical surveys to document plant diversity on public lands and search for new rare plant populations. Volunteers made several trips to Klickitat Wildlife Area to continue botanical surveys of the Simcoe Unit and found four more rare plant populations there. Volunteers also visited Marcellus Shrub Steppe Natural Area Preserve to monitor as a group and with Rare Care and DNR staff. Unfortunately, we did not have suitable climatic conditions this year to make our search for several rare vernal pool species successful.

Volunteer activities wound down in the fall, with only four monitoring trips attempted. These included surveys for Mt. Hood bugbane (*Actaea laciniata*), Sierra cliffbrake (*Pellaea brachyptera*), sickle-pod rockcress (*Botrychium ascendens*), and California sword fern (*Polystichum californicum*). Many fern species can be monitored almost any time of the year as long as there's not snow or high water to prevent access.

For the complete list of 2022 field results see pages 8-14.

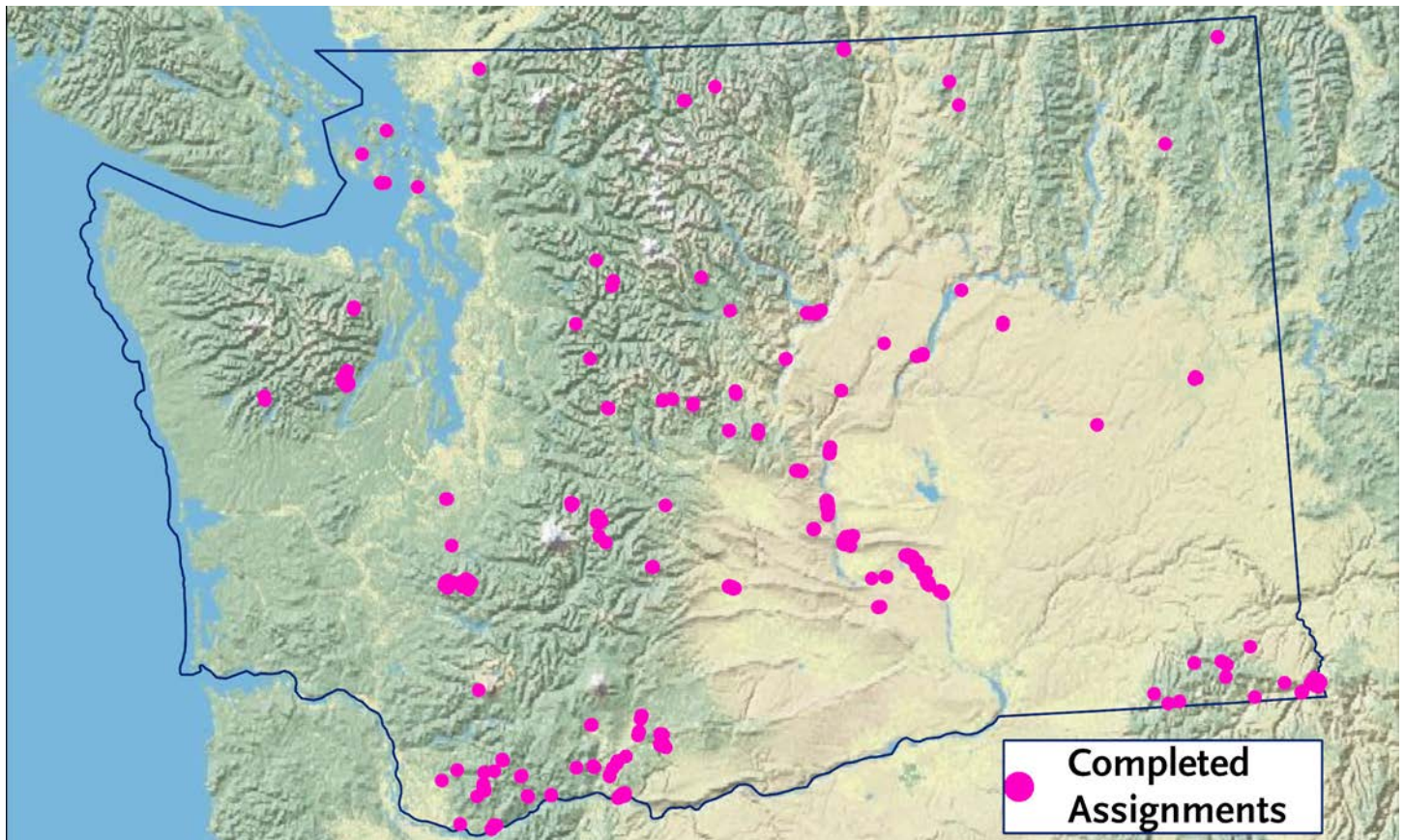


Rare Care volunteers and staff along with DNR staff at Marcellus Shrub Steppe Natural Area Preserve in June. Photo: Anna Carragee

WHERE WE WORKED

Volunteers monitored rare plant populations across Washington on federal, state, and local public lands. The map below shows the completed assignments. Approximately 55% of the sites were on federal land, 40% were on state lands, 2% were on local county or city lands, and 1% were on private lands (some sites occurred on two or more jurisdictions).

The clusters of monitored populations reflect biodiversity hotspots across the state. The clusters are also influenced by where our volunteers live and locations volunteers are excited to visit, even if it requires a longer drive. For example, the Columbia River Gorge is especially popular with local rare plant monitors and volunteers from the Puget Sound region.



2022 completed assignments. These are only the sites that already had geographic location in the Washington Natural Heritage Database.



Washington coneflower (*Rudbeckia alpicola*) in seed. Photo: Anna Carragee

SEED BANKING

In the 2022 field season, 10 seed collections were added to the Miller Seed Vault, representing eight different taxa (see table below). All collections were made by Rare Care staff or volunteers. Seed collections of Wenatchee Mountains checker-mallow (*Sidalcea oregana* var. *calva*) support ongoing Endangered Species Act recovery efforts in partnership with the US Fish & Wildlife Service.

This year, we focused our collection efforts on Camas Meadows Natural Area Preserve (NAP) where we collected seeds from four species, including Wenatchee Mountains checker-mallow, Wenatchee larkspur (*Delphinium viridescens*), Wenatchee Mountains coneflower (*Rudbeckia alpicola*), and tall agoseris (*Agoseris elata*). This NAP is an incredibly diverse, high quality meadow that hosts many of the endemic species of the Wenatchee Mountains.

Additionally, we made two other collections of Wenatchee Mountains coneflower. Although it is not a listed species in Washington State, it is locally endemic to the Wenatchee

Mountains. Endemic species such as this coneflower are a priority for the Miller Seed Vault collection since it is the only seed bank in the state with a rare native plant focus, and as far as we know this species is not represented in any other *ex situ* collections.

Small collections of gray stickseed (*Hackelia cinerea*) and Cotton’s stickseed (*Hackelia diffusa* var. *cottonii*) were made by volunteers at Ginkgo Petrified Forest State Park. Initially collected as a way to confirm identification of these difficult to distinguish co-genera species, we were also in a unique position to save the seeds for long-term by adding them to our collection.

New species added to the vault include Chamber’s paintbrush (*Castilleja chambersii*), Washington coneflower, and Cotton’s stickseed. Chamber’s paintbrush was only recently discovered in Washington and this collection is from the one known occurrence, located on private land in southwest Washington. The seed vault now holds 148 unique taxa.

2022 SEED COLLECTIONS ADDED TO MILLER SEED VAULT

Species	EO #	No. of Accessions	Management Area
<i>Agoseris elata</i>	17	52	Camas Meadows Natural Area Preserve
<i>Carex comosa</i>	N/A	52	Elbow Lake State Park
<i>Castilleja chambersii</i>	1	50	Private Land
<i>Delphinium viridescens</i>	20	50	Camas Meadows Natural Area Preserve
<i>Hackelia cinerea</i>	23	8	Ginkgo Petrified Forest State Park
<i>Hackelia diffusa</i> var. <i>diffusa</i>	N/A	3	Ginkgo Petrified Forest State Park
<i>Rudbeckia alpicola</i>	N/A	50	Private Land
<i>Rudbeckia alpicola</i>	N/A	49	Camas Meadows Natural Area Preserve
<i>Rudbeckia alpicola</i>	N/A	44	Okanogan-Wenatchee NF Wenatchee River RD
<i>Sidalcea oregana</i> var. <i>calva</i>	9	50	Camas Meadows Natural Area Preserve



Romey Haberle looking for the next long hair sedge seeds to collect. Photo: Anna Carragee

SEED LONGEVITY STUDY

In collaboration with the Center for Plant Conservation (CPC) and many of the botanical gardens in the CPC network across the country, Rare Care collected seeds for a seed longevity study. This year, we contributed a fresh collection of long hair sedge (*Carex comosa*). Volunteer Romey Haberle and Volunteer and Outreach Coordinator Anna Carragee collected the seeds from this shoreline sedge via canoe. We also sent the CPC seeds from an older collection of the same population to

compare viability of fresh seeds to those that had been stored for 15 years in the Miller Seed Vault. The CPC seed longevity study will help understand how long seeds can survive in seed banks and in turn inform curation and management decisions. In 2021, Rare Care collected pasqueflower (*Anemone patens* var. *multifida*) and in 2023 will collect golden paintbrush (*Castilleja levisecta*).

MILLER SEED VAULT

Peg Balachowski, Ryan Balkcom, Shelly Carpenter, Jane Engle, Sarah McIlwain, Mayra Hernandez Olivera, Nina Young, and Shannon Thoele collectively spent 349 hours cleaning the 2021 seed collections. They worked on 15 collections by counting and cleaning 58,243 seeds and 9.307g of golden paintbrush seeds. The four collections of Klickitat and Suksdorf's desert-parsleys (*Lomatium klickitense* and *L. suksdorfii*) were particularly time consuming as the seeds grow as joined pairs that needed to be gently pulled apart.

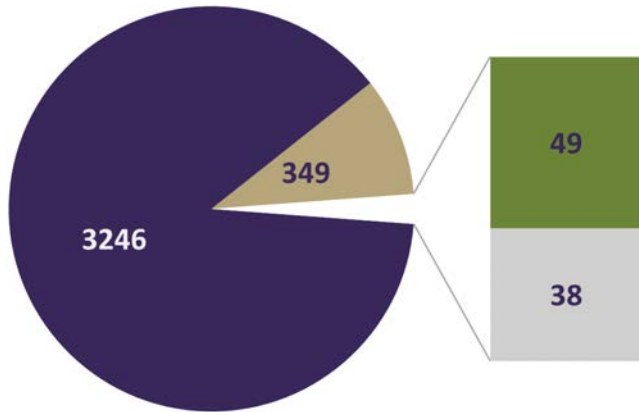
Shelly Carpenter gave special attention to an unusually large collection of Umtanum Desert buckwheat (*Eriogonum codium*) seeds that will help with species recovery of this Endangered species and Peg Balachowski worked with Wenatchee Mountains checker-mallow seeds. Both of these collections came from plants grown at Darby Canyon Natives to provide a seed source for planting and establishing new populations of these Endangered Species.

Joshua Glant continued our in-house germination testing to determine the best light and temperature conditions to promote germination. We use this information to develop propagation protocols for species in the Miller Seed Vault.



Peg Balachowski sorting seeds. Photo: Mark Stone

VOLUNTEERS



HOURS

- Rare Plant Monitoring
- Miller Seed Vault
- Germination Testing
- Seed Collecting

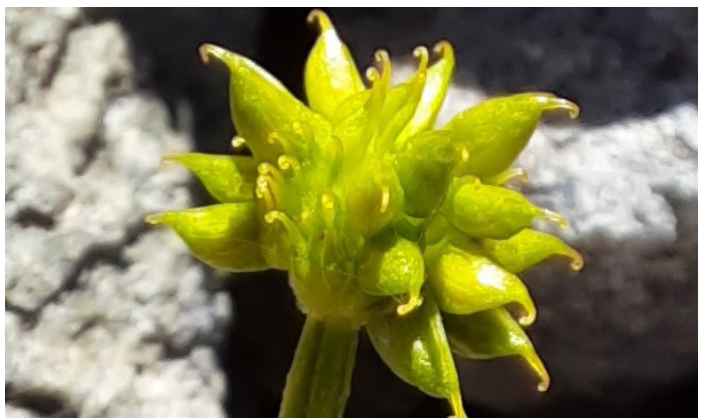
Across all Rare Care activities, volunteers contributed **3,682** hours in 2022. Most hours supported our rare plant monitoring program, for which 104 volunteers completed monitoring assignments. Special honors go to Robin Fitch, Paul Slichter, Krista Thie, and Kimberly Quayle who each submitted at least five monitoring reports, with Paul submitting 15! The enthusiasm, expertise, and time contributed by veteran and new volunteers alike is invaluable to plant conservation.

We had a few especially exciting finds in 2022. Volunteers rediscovered a population of small flower evening primrose (*Eremothera minor*) at Hanford Reach National Monument, a population that had not been seen since 1997. Rare Care volunteers had made three attempts to find it in the last decade and USFWS staff had also previously looked for it on several occasions, so we thought this population was extirpated. But Mickie Chamness and Janelle Downs spotted 30 plants growing in the middle of the decommissioned road on the way to a different assignment! It must have liked all that moisture this spring! And it also highlights the ability of seeds to survive for years in the soil, waiting for the right conditions.

Another notable find was a population of Cooley's buttercup (*Arcteranthis cooleyae*) near Glacier Basin. This particular population had not been visited in the past 60 years since it was first found and collected. Jeff Thorson not only relocated the population, but found 86 plants in great condition.

Also in the central Cascades volunteers documented another new population of a rare plant that thrives in cold microclimates. Jennie Green found a new population of clubmoss cassiope (*Cassiope lycopodioides*) which is only the third known population of it in the state. She found it on her way to a different assignment last year and we asked her go back and collect an herbarium voucher this year.

These three finds demonstrate the knowledge and dedication of our volunteer and how valuable their contributions are for understanding Pacific Northwest's plant biodiversity.



Top to bottom: Steven Clark and Don Hardin by Mark Stone
 Small flower evening primrose by Mickie Chamness
 Cooley's buttercup by Jeff Thorson
 Clubmoss cassiope by Jennie Green

THANK YOU VOLUNTEERS



WENATCHEE MOUNTAINS CHECKERMALLOW (75+ HOURS)

State Endangered
Sidalcea oregana var. *calva*
Photo: Anna Carragee

Julia Bent
Ron Bockelman
Dan Brake
Jane Engle
Robin Fitch
Deborah Naslund
Lindsey Salmonson
Young Shim
Paul Slichter
Jeff Thorson
Carolyn Wright

***We welcome your help to make our records as accurate as possible. If you think we're missing any hours please send in any relevant time sheets.



WHITED'S FUZZY-TONGUE PENSTEMON (26-74 HOURS)

State Threatened
Penstemon eriantherus var. *whitedii*
Photo: Julie Sanderson

Ashlie Arthur	Ron Klump
Peg Balachowski	Samuel Lee
Ryan Balkcom	Joanna Long
Steve Caicco	Carol Mack
Shelly Carpenter	Jacob Maki
Brenda Cunnigham	Timothy Manns
Darcy Dauble	Alicia McMurchie
Amy Dawley	Katie Mitchell
Lorna Emerich	Doug Murphy
Duane Engle	Teddy Pierson
Joshua Glant	Alyssa Reid
John Graves	Kalama Reuter
Chelsea Gudgeon	Susan Saul
Don Hardin	Elaine Stewart
John Stuart	John Stuart
Mayra Hernandez Olivera	Kyle Takagi
Krista Thie	Krista Thie
Susan Wickham	Susan Wickham
Sarah Zabel	Sarah Zabel



HOOVER'S DESERT-PARSLEY (0-25 HOURS)

State Sensitive
Lomatium lithosolamons
Photo: Betty Swift

Natalie Andrus	Bob Kent
Lisa Appel	Elyssa Kerr
Sarah Arnold	Jill LaRue
Allison Bachner	Madison Lucas
Susan Ballinger	Connor McDermott
Bethany Beyer	Sarah McIlwain
John Bolivar	Scott Moore
Anna Carlson	Kari Murphy
Mickie Chamness	Robert Nerenberg
Steven Clark	Skye Pelliccia
Jason Clinch	Meaghan Petix
Catherine Conolly	Kimberly Quayle
Meg Decker	Allison Rollin
Tanya DeMarsh Dodson	Charlie Sawyer
Matthew Distler	Cynthia Smith-Kuebel
Eron Drew	Teresa Sollitto
Janet Egger	Suzanne Stanton
Catherine Flick	Hally Swift
Tamara Fritze	Shannon Thoele
Devin Geiger	George Thornton
Jennie Green	Ronald Toonen
Ferenc Gulyas	Susan Varnum
Romey Haberle	Barbara Varnum-Finney
Tali Hamilton	Steve Weigner
Jessica Hartsell	Amanda Weiss
Jackie Hoskins	Margaret Will
Richard Johnson	Jackson Wright
Barb Kelly	
Kelsey Kelmel	

RARE CARE IS GRATEFUL FOR THE TIME AND SKILLS VOLUNTEERS CONTRIBUTED IN 2022!

2022 RARE PLANT MONITORING RESULTS

Species Name	EO Num ¹	State Status ²	Visit Date	Species Found	Pop. Size ³	Managed Area	Owner
A General Survey			6/4/2022			Klickitat Canyon Community Forest	ST DNR
A General Survey			5/25/2022			Klickitat WA	ST DFW
A General Survey			7/1/2022			Klickitat WA	ST DFW
<i>Actaea elata</i> var. <i>elata</i>	15	S	7/7/2022	Yes	2	Columbia River Gorge National Scenic Area	USAFS
<i>Actaea elata</i> var. <i>elata</i>	34	S	8/6/2022	Yes	89	DNR Trust Lands - NW Region Baker District	ST DNR
<i>Actaea elata</i> var. <i>elata</i>	New ⁴	S	8/12/2022	Yes	2	Friends of the Columbia Gorge	PVTUUU
<i>Actaea laciniata</i>	7	S	7/5/2022	No		DNR Trust Yacolt District	DNR
<i>Actaea laciniata</i>	9	S	8/12/2022	Yes	101 to 300	Mt Adams RD, Gifford Pinchot NF	USAFS
<i>Actaea laciniata</i>	12	S	8/6/2022	Site not reached		Cowlitz RD, Gifford Pinchot NF	USAFS
<i>Actaea laciniata</i>	13	S	9/11/2022	Yes	102	Cowlitz RD, Gifford Pinchot NF	USAFS
<i>Agoseris elata</i>	17	S	7/14/2022	Yes	290	Camas Meadows NAP	ST DNR
<i>Allium campanulatum</i>	1	S	7/15/2022	Uncertain	2	Walla Walla RD, Umatilla NF	USAFS
<i>Allium campanulatum</i>	3	S	7/23/2022	No		Naches RD, Okanogan-Wenatchee NF	USAFS
<i>Anemone patens</i> var. <i>multifida</i>	3	S	7/2/2022	Yes	1,001 to 10,000	Colockum WA, Wenatchee River RD, Okanogan-Wenatchee NF	ST DFW, USFS
<i>Antennaria corymbosa</i>	6	S	6/15/2022	Yes	18	Pomeroy RD, Umatilla NF	USAFS
<i>Aphyllon californicum</i> ssp. <i>grayanum</i>	5	E	8/11/2022	No		Conboy Lake NWR	USAFWS
<i>Aphyllon californicum</i> ssp. <i>grayanum</i>	None ⁵	E	8/11/2022	Yes	11	Conboy Lake NWR	USAFWS
<i>Arcteranthis cooleyae</i>	2	S	8/7/2022	Yes	86 clumps	Darrington RD, Mt Baker-Snoqualmie NF	USAFS
<i>Astragalus geyeri</i> var. <i>geyeri</i>	3	S	5/25/2022	Yes	501 to 1,000	Hanford Reach NM	USAFWS
<i>Astragalus misellus</i> var. <i>pauper</i>	37	T	4/25/2022	Uncertain	100	BLM - Spokane District (Wenatchee Field Office)	USABLM
<i>Boechera atrorubens</i>	New ⁴		5/22/2022	Yes	7	Klickitat WA	ST DFW
<i>Bolandra oregana</i>	1	T	5/20/2022	Yes	501 to 1000	Columbia Land Trust	PVTUUU
<i>Bolandra oregana</i>	7	T	5/30/2022	No		Columbia River Gorge National Scenic Area	USAFS
<i>Botrychium ascendens</i>	17	T	9/25/2022	No		Methow Valley RD, Okanogan-Wenatchee NF	USAFS

2022 RARE PLANT MONITORING RESULTS (CONTINUED)

Species Name	EO Num ¹	State Status ²	Visit Date	Species Found	Pop. Size ³	Managed Area	Owner
<i>Botrychium ascendens</i>	21	T	7/24/2022	No		Snoqualmie RD, Mt Baker-Snoqualmie NF	USAFS
<i>Calochortus longebarbatus</i> var. <i>longebarbatus</i>	New ⁴	S	7/3/2022	Yes	101 to 300	Klickitat WA	ST DFW
<i>Calochortus macrocarpus</i> var. <i>maculosus</i>	28	T	6/18/2022	Site not reached		BLM - Vale District	USABLM
<i>Calochortus macrocarpus</i> var. <i>maculosus</i>	New ⁴	T	7/7/2022	Yes	1,001 to 10,000	Pomeroy RD, Umatilla NF	USAFS
<i>Camassia cusickii</i>	None ⁵	S	4/29/2022	Yes	1,000 to 10,000		PVTUUU
<i>Campanula lasiocarpa</i>	8	S	8/10/2022	No		Darrington RD, Mt Baker-Snoqualmie NF	USAFS
<i>Campanula lasiocarpa</i>	New ⁴	S	8/20/2022	Yes	30	Skykomish RD, Mt Baker-Snoqualmie NF	USAFS
<i>Carex obtusata</i>	5	S	8/6/2022	Yes	1,001 to 10,000	Hood Canal RD, Olympic NF	USAFS
<i>Carex tenuiflora</i>	2	S	8/25/2022	Yes	1,001 to 10,000	Tonasket RD, Colville NF	USAFS
<i>Cassiope lycopodioides</i>	3	S	8/20/2022	No		Skykomish RD, Mt Baker-Snoqualmie NF	USAFS
<i>Cassiope lycopodioides</i>	New ⁴	S	8/11/2022	Yes	9 clumps	Darrington RD, Mt Baker-Snoqualmie NF	USAFS
<i>Castilleja cryptantha</i>	34	S	8/22/2022	Yes	10,000 to 100,000 stems	Naches RD, Okanogan-Wenatchee NF	USAFS
<i>Castilleja cryptantha</i>	35	S	8/7/2022	No		Naches RD, Okanogan-Wenatchee NF	USAFS
<i>Chaenactis thompsonii</i>	37	S	8/12/2022	No		Cle Elum RD, Okanogan-Wenatchee NF	USAFS
<i>Chrysolepis chrysophylla</i> var. <i>chrysophylla</i>	7	S	6/20/2022	Yes	12 clumps	DNR Trust Lands - Hood Canal District	DNR
<i>Chrysolepis chrysophylla</i> var. <i>chrysophylla</i>	33	S	6/16/2022	Yes	9	Hood Canal RD, Olympic NF	USAFS
<i>Coptis aspleniifolia</i>	11	S	7/14/2022	Yes	301 to 500	Snoqualmie RD, Mt Baker-Snoqualmie NF	USAFS
<i>Corydalis aquae-gelidae</i>	10	T	8/30/2022	Site not reached		Mt St Helens NVM, Gifford Pinchot NF	USAFS
<i>Corydalis aquae-gelidae</i>	37	T	7/23/2022	No		Mt St Helens NVM, Gifford Pinchot NF	USAFS
<i>Corydalis aquae-gelidae</i>	52	T	8/30/2022	Site not reached		Mt St Helens NVM, Gifford Pinchot NF	USAFS
<i>Corydalis aquae-gelidae</i>	53	T	8/31/2022	No		Mt Adams RD, Gifford Pinchot NF	USAFS
<i>Crepis bakeri</i>	New ⁴	E	5/29/2022	Yes		DNR Trust Lands - SE Region	ST DNR
<i>Crepis bakeri</i>	New ⁴	E	6/18/2022	Yes		Mt Adams RD, Gifford Pinchot NF	USAFS

2022 RARE PLANT MONITORING RESULTS (CONTINUED)

Species Name	EO Num ¹	State Status ²	Visit Date	Species Found	Pop. Size ³	Managed Area	Owner
<i>Crepis bakeri</i>	None ⁵	E	6/15/2022	Yes	76	Klickitat WA	ST DFW
<i>Cryptantha gracilis</i>	11	S	5/21/2022	No		Sun Lakes State Park	ST SPR
<i>Cryptantha leucophaea</i>	42	T	5/26/2022	No		BLM - Spokane District (Wenatchee Field Office)	USABLM
<i>Cryptantha leucophaea</i>	48	T	5/6/2022	No		Hanford Reach NM, South Columbia Basin WA - Wahluke Slope Unit	USAFWS
<i>Cryptantha rostellata</i>	19	S	6/23/2022	No		Yakima Training Center	USADOD
<i>Cryptantha scoparia</i>	4	S	5/21/2022	No		Sun Lakes State Park	ST SPR
<i>Cypripedium fasciculatum</i>	64		7/10/2022	No		Snoqualmie RD, Mt Baker-Snoqualmie NF	USAFS
<i>Cypripedium parviflorum</i>	12	S	6/21/2022	No		Turnbull NWR	USAFWS
<i>Dactylorhiza viridis</i>	6	S	6/24/2022	No		Tonasket RD, Colville NF	USAFS
<i>Delphinium viridescens</i>	16	T	7/24/2022	No		Cle Elum RD, Okanogan-Wenatchee NF	USAFS
<i>Eremothera minor</i>	2	S	6/2/2022	Yes	30	Hanford Reach NM	USAFWS
<i>Eremothera pygmaea</i>	2	S	5/20/2022	No		Sun Lakes State Park	ST SPR
<i>Eremothera pygmaea</i>	45	S	5/11/2022	No		Hanford Reach NM	USAFWS
<i>Erigeron howellii</i>	2	T	6/25/2022	Yes	1,001 to 10,000 clumps	Table Mountain / Greenleaf Peak NRCA	ST DNR
<i>Eriophorum viridicarinatum</i>	1	S	6/26/2022	Yes	62 stems	Sullivan Lake RD, Colville NF	USAFS
<i>Erythranthe pulsiferae</i>	12	S	6/5/2022	Yes		Trout Lake NAP	ST DNR
<i>Erythranthe pulsiferae</i>	16	S	6/4/2022	Yes		DNR Trust Lands - SE Region	ST DNR
<i>Erythranthe pulsiferae</i>	24	S	6/3/2022	Yes	1,000 to 10,000	Klickitat Canyon NRCA	ST DNR
<i>Erythranthe pulsiferae</i>	New ⁴	S	6/4/2022	Yes	1,0001 to 10,000	Klickitat Canyon NRCA	ST DNR
<i>Erythranthe suksdorfii</i>	5	S	5/21/2022	Uncertain	21	Sun Lakes State Park	ST SPR
<i>Erythranthe suksdorfii</i>	26	S	4/28/2022	No		Steamboat Rock State Park, BLM - Spokane District (Border Field Office)	ST SPR, USBLM
<i>Erythranthe suksdorfii</i>	28	S	5/3/2022	No		BLM - Spokane District (Border Field Office)	USABLM
<i>Euonymus occidentalis</i> var. <i>occidentalis</i>	17	S	5/17/2022	Yes		Moulton Falls Regional Park	LOCCTY
<i>Euonymus occidentalis</i> var. <i>occidentalis</i>	18	S	5/30/2022	Yes		DNR Trust Lands - Pacific Cascade Region	ST DNR

2022 RARE PLANT MONITORING RESULTS (CONTINUED)

Species Name	EO Num ¹	State Status ²	Visit Date	Species Found	Pop. Size ³	Managed Area	Owner
<i>Gentiana douglasiana</i>	1	S	7/31/2022	Yes	101 to 300	Cle Elum RD, Okanogan-Wenatchee NF	USAFS
<i>Gentiana glauca</i>	3	S	7/20/2022	No		Chopaka Mountain NAP	ST DNR
<i>Githopsis specularioides</i>	28	S	5/27/2022	Yes	3	Hamma Hamma Balds NAP	ST DNR
<i>Githopsis specularioides</i>	New ⁴	S	5/17/2022	Yes	101 to 300	Klickitat WA	ST DFW
<i>Hackelia cinerea</i>	23	S	4/21/2022	No		Ginkgo Petrified Forest State Park	ST SPR
<i>Hackelia cinerea</i>	New ⁴	S	6/17/2022	Yes	101 to 300	Ginkgo Petrified Forest State Park	ST SPR
<i>Hackelia diffusa</i> var. <i>diffusa</i>	7	T	6/3/2022	Yes	5	Klickitat Canyon Community Forest	ST DNR
<i>Hackelia diffusa</i> var. <i>diffusa</i>	11	T	5/19/2022	No		Ginkgo Petrified Forest State Park	ST SPR
<i>Hackelia hispida</i> var. <i>disjuncta</i>	6	S	5/21/2022	No		Sun Lakes State Park	ST SPR
<i>Isoetes nuttallii</i>	New ⁴	S	6/3/2022	Yes	1,001 to 10,000	Klickitat Canyon NRCA	ST DNR
<i>Isoetes nuttallii</i>	New ⁴	S	7/3/2022	Yes		Klickitat WA	ST DFW
<i>Juncus hemiendytus</i> var. <i>hemiendytus</i>	4	S	6/4/2022	Yes	1,001 to 10,000	Klickitat Canyon NRCA	ST DNR
<i>Juncus hemiendytus</i> var. <i>hemiendytus</i>	New ⁴	T	6/15/2022	Yes		Klickitat WA	ST DFW
<i>Juncus hemiendytus</i> var. <i>hemiendytus</i>	None ⁵	T	6/15/2022	Yes	80-100	Klickitat WA	ST DFW
<i>Juncus kelloggii</i>	New ⁴	E	6/3/2022	Yes	40	Klickitat Canyon NRCA	ST DNR
<i>Juncus kelloggii</i>	New ⁴	E	6/4/2022	Yes	101 to 300	Klickitat Canyon NRCA	ST DNR
<i>Leptogium</i> sp.	2	E	5/30/2022	Yes		Friends of the Columbia Gorge	PVTUUU
<i>Leptosiphon bolanderi</i>	None ⁵	S	4/29/2022	Yes	501 to 1,000		PVTUUU
<i>Leptosiphon minimus</i>	3	T	5/25/2022	Yes	501 to 1,000	Moran State Park	ST SPR
<i>Leptosiphon minimus</i>	8	T	6/2/2022	Yes	501 to 1000	Friday Harbor Labs	ST UAA
<i>Lipocarpha aristulata</i>	1	S	8/10/2022	Yes	88 clumps	Hanford Reach NM	USAFWS
<i>Lomatium klickitatense</i>	New ⁴	T	6/3/2022	Yes	501 to 1000 clumps	Rattlesnake Falls NAP	ST DNR
<i>Lomatium klickitatense</i>	None ⁵	T	5/29/2022	Yes	13	Friends of the Columbia Gorge	PVTUUU
<i>Lomatium klickitatense</i>	None ⁵	T	4/29/2022	Yes	101 to 300		PVTUUU
<i>Lomatium lithosolamans</i>	17	S	3/25/2022	Yes	10,001 to 100,000	Cowiche Canyon ACEC	USABLM
<i>Lomatium lithosolamans</i>	18	S	4/3/2022	Yes	1,001 to 10,000	Cowiche Canyon Conservancy	PVT

2022 RARE PLANT MONITORING RESULTS (CONTINUED)

Species Name	EO Num ¹	State Status ²	Visit Date	Species Found	Pop. Size ³	Managed Area	Owner
<i>Lomatium lithosolamans</i>	None ⁵	S	3/20/2022	Yes	10,000 to 100,000	Cowiche Canyon Conservancy	PVT
<i>Lomatium rollinsii</i>	4	T	3/9/2022	Yes	1,001 to 10,000	BLM - Vale District, Chief Joseph WA	USABLM, ST DFW
<i>Lomatium rollinsii</i>	12	T	4/25/2022	No		Fields Spring State Park	ST SPR
<i>Lomatium roneorum</i>	2	E	7/1/2022	Yes	6	Wenatchee River RD, Okanogan-Wenatchee NF	USAFS
<i>Lomatium roneorum</i>	3	E	8/3/2022	No		Wenatchee River RD, Okanogan-Wenatchee NF	USAFS
<i>Lomatium serpentinum</i>	17	S	4/19/2022	Yes	501 to 1000	BLM - Vale District	USABLM
<i>Lomatium suksdorfii</i>	3	S	6/3/2022	Yes	101 to 300		PVTUUU
<i>Lomatium suksdorfii</i>	15	S	6/4/2022	Yes	10,001 to 100,000	DNR Trust Lands - SE Region	ST DNR
<i>Lomatium suksdorfii</i>	16	S	6/4/2022	Yes	1,001 to 10,000	White Salmon Oak NRCA	ST DNR
<i>Lomatium suksdorfii</i>	35	S	6/4/2022	Yes	1,000 to 10,000	White Salmon Oak NRCA	ST DNR
<i>Lomatium tuberosum</i>	8	S	4/4/2022	Yes	242	Sentinel Slope ACEC, Columbia NWR	USABLM, USFWS
<i>Meconella oregana</i>	8	E	3/25/2022	Yes	1,001 to 10,000	Columbia River Gorge National Scenic Area	USAFS
<i>Montia diffusa</i>	19	S	6/3/2022	No		Mt Adams RD, Gifford Pinchot NF	USAFS
<i>Oxytropis campestris</i> var. <i>columbiana</i>	3	E	6/6/2022	Yes	50	Iceberg Point ACEC	USABLM
<i>Parnassia palustris</i>	16	S	7/30/2022	Yes	100,000+	Pacific RD, Olympic NF	USAFS
<i>Pedicularis rainierensis</i>	49	S	8/6/2022	Yes	1,001 to 10,000 clumps	Snoqualmie RD, Mt Baker-Snoqualmie NF	USAFS
<i>Pedicularis rainierensis</i>	53	S	7/17/2022	Yes	1,001 to 10,000	Snoqualmie RD, Mt Baker-Snoqualmie NF	USAFS
<i>Pediocactus nigrispinus</i>	20	S	4/21/2022	Yes	1,001 to 10,000	Ginkgo Petrified Forest State Park	ST SPR
<i>Pediocactus nigrispinus</i>	26	S	7/20/2022	Yes	301 to 500	Colockum WA	ST DFW
<i>Pediocactus nigrispinus</i>	53	S	4/23/2022	Yes	1,001 to 10,000	BLM - Spokane District (Border Field Office)	USABLM
<i>Pediocactus nigrispinus</i>	56	S	5/13/2022	Yes	55	Ginkgo Petrified Forest State Park	ST SPR

2022 RARE PLANT MONITORING RESULTS (CONTINUED)

Species Name	EO Num ¹	State Status ²	Visit Date	Species Found	Pop. Size ³	Managed Area	Owner
<i>Pellaea brachyptera</i>	4	S	10/1/2022	No		Cle Elum RD, Okanogan-Wenatchee NF	USAFS
<i>Penstemon barrettiae</i>	15	T	6/5/2022	Yes	30	Mt Adams RD, Gifford Pinchot NF, Columbia River Gorge National Scenic Area	USAFS
<i>Penstemon barrettiae</i>	21	T	6/21/2022	Yes	101 to 300	Klickitat WA	ST DFW
<i>Penstemon eriantherus</i> var. <i>whitedii</i>	4	T	6/4/2022	Yes	122	BLM - Spokane District (Border Field Office)	USABLM
<i>Penstemon pennellianus</i>	26	T	5/25/2022	Site not reached		Pomeroy RD, Umatilla NF	USAFS
<i>Penstemon pennellianus</i>	None ⁵	T	7/15/2022	Yes	501 to 1,000	Pomeroy RD, Umatilla NF	USAFS
<i>Phlox solivaga</i>	2	E	6/17/2022	No		Walla Walla RD, Umatilla NF	USAFS
<i>Plectritis brachystemon</i>	10	S	5/28/2022	Yes	1,001 to 10,000	Deception Pass State Park	ST SPR
<i>Plectritis brachystemon</i>	13	S	6/3/2022	Yes	10,000 to 100,000	Rattlesnake Falls NAP	ST DNR
<i>Plectritis brachystemon</i>	New ⁴	S	6/3/2022	Yes	1,001 to 10,000		PVTUUU
<i>Polemonium pectinatum</i>	35	T	5/4/2022	No		BLM - Spokane District (Wenatchee Field Office)	USABLM
<i>Polemonium pectinatum</i>	37	T	6/6/2022	Yes	101 to 300 stems	WSDOT Eastern Region	WDOT
<i>Polygonum parryi</i>	2	S	6/5/2022	No		Trout Lake NAP	ST DNR
<i>Polystichum californicum</i>	10	S	10/14/2022	No		Mt St Helens NVM, Gifford Pinchot NF	USAFS
<i>Potentilla nivea</i>	12	S	8/18/2022	Yes	150	Methow Valley RD, Okanogan-Wenatchee NF	USAFS
<i>Ribes cereum</i> var. <i>colubrinum</i>	5	E	5/9/2022	No		Chief Joseph WA	ST DFW
<i>Ribes oxyacanthoides</i> ssp. <i>irriguum</i>	21	S	5/31/2022	Yes	119	Pomeroy RD, Umatilla NF; Asotin Creek WA	USAFS, ST DFW
<i>Ribes wolfii</i>	3	S	6/20/2022	Yes	101 to 300	Pomeroy RD, Umatilla NF	USAFS
<i>Ribes wolfii</i>	16	S	6/27/2022	Yes	15 clumps	Pomeroy RD, Umatilla NF	USAFS
<i>Sabulina nuttallii</i> var. <i>fragilis</i>	1	S	7/17/2022	No		Columbia NWR	USAFWS
<i>Sanicula marilandica</i>	32	S	6/21/2022	Yes	301 to 500	Dishman Hills NRCA	ST DNR
<i>Sericocarpus rigidus</i>	94	S	6/6/2022	No		Iceberg Point ACEC	USABLM

2022 RARE PLANT MONITORING RESULTS (CONTINUED)

Species Name	EO Num ¹	State Status ²	Visit Date	Species Found	Pop. Size ³	Managed Area	Owner
<i>Silene seelyi</i>	6	S	7/15/2022	No		Wenatchee River RD, Okanogan-Wenatchee NF	USAFS
<i>Silene spaldingii</i>	62	T	7/22/2022	No		Turnbull NWR	USAFWS
<i>Sisyrinchium septentrionale</i>	18	S	5/15/2022	No		Little Pend Oreille NWR	USAFWS
<i>Spiranthes porrifolia</i>	1	S	6/23/2022	Yes		Columbia River Gorge National Scenic Area	USAFS
<i>Spiranthes porrifolia</i>	17	S	7/25/2022	No		Naches RD, Okanogan-Wenatchee NF	USAFS
<i>Swertia perennis</i>	2	S	8/13/2022	No		Skykomish RD, Mt Baker-Snoqualmie NF	USAFS
<i>Trichostema oblongum</i>	10	R1	7/3/2022	Yes	1,001 to 10,000	Klickitat WA	ST DFW
<i>Trifolium thompsonii</i>	26	T	5/27/2022	Yes	1,001 to 10,000	BLM - Spokane District (Wenatchee Field Office)	USABLM
<i>Trillium albidum</i> ssp. <i>parviflorum</i>	1	S	4/7/2022	No		Bald Hill NAP	ST DNR
<i>Trillium albidum</i> ssp. <i>parviflorum</i>	41	S	4/22/2022	Yes	1,000 to 10,000	Fort Lewis MR	USADOD
<i>Utricularia minor</i>	None ⁵		7/11/2022	No		Three Rivers RD, Colville NF	USAFS
<i>Woodwardia fimbriata</i>	New ⁴	S	4/15/2022	Yes	41	City of Auburn	LOCMUN
<i>Wyethia angustifolia</i>	3	S	7/19/2022	No		Lacamas Lake Regional Park	LOCCTY

ADDENDUM TO 2021 RARE PLANT MONITORING RESULTS

Species Name	EO Num ¹	State Status ²	Visit Date	Species Found	Pop. Size ³	Managed Area	Owner
<i>Githopsis specularioides</i>	New ⁴	S	4/29/2022	Y	100	Private Property	PVTUUU

TABLE NOTES

1. EO num is the element occurrence number assigned to the site by the Washington
2. State Status: E = endangered, R1 = review species (group 1), R2 = review species
3. Population size estimate represents individuals unless otherwise noted.
4. Potentially new site that may not be in WNHP database.
5. Site identified by land owner or other party and may not be in WNHP database.
6. Site may contain hybrids.

ABBREVIATIONS

ACEC - Area of Critical Environmental Concern
BSA - State University Natural Area
EWA - Established Wilderness Area
ERD - Energy Research and Development
IND - Indian Reservation
LOCCTY - City Municipality or County
NAP - Natural Area Preserve
NF - National Forest
RD - Ranger District
ST DFW - Washington State Department of Fish and Wildlife
ST DNR - Washington State Department of Natural Resources
ST SPR - Washington State Parks and Recreation
ST UAA - State University Property
ST WDT - Washington State Department of Transportation
NRCA - Natural Resources Conservation Area
NSA - National Scenic Area
NVM - National Volcanic Monument
NWR - National Wildlife Refuge
USABLM - Bureau of Land Management
USADOD - United States Department of Defense
USAFS - United States Forest Service
USAFWS - United States Fish and Wildlife Service
USANPS - National Park Service
PUD - Public Utility District
WA - Wildlife Area
PVT - Privately owned