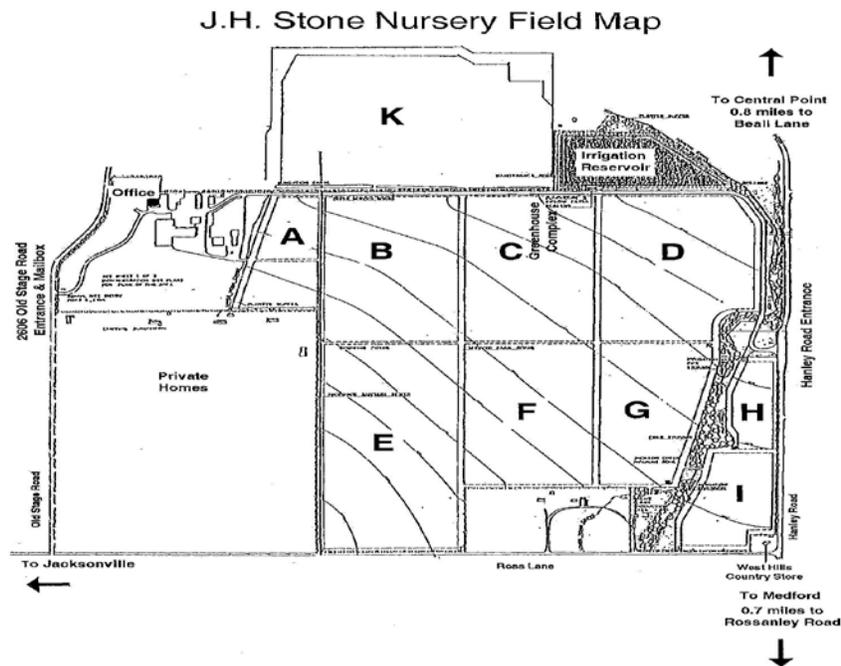


Vernal Pool Information Network
March 25, 2015
Site Visit to Herbert J. Stone Nursery
Summary

Attendees: John Justin, U.S. Forest Service (USFS), Nursery Manager; Wayne Rolle, USFS; Jason McNeal, USFS; Sam Friedman, U. S. Fish and Wildlife Service (USFWS); Greg Swenson, consultant; Craig Tuss, Rogue Valley Council of Governments (RVCOG); Kristi Mergenthaler, Southern Oregon Land Conservancy (SOLC); Marilyn Rice, landowner; Molly Morrison, The Nature Conservancy (TNC); Paul Benton, Oregon Department of Transportation (ODOT); Doug Kendig, U.S. Bureau of Land Management (BLM); Mason London, BLM; Paul Dimaggio, Jackson Soil and Water Conservation District (SWCD), Lori Tella, SWCD; Peter Winnick, Natural Resource Conservation Service (NRCS); Erin Kurtz, NRCS; Don Martin, consultant; Jason Clinch, consultant; Greg Stabach, RVCOG.

Objective of meeting and visit: The objective of the visit is to see the seed bulking efforts at the Stone Nursery in Central Point where the Oregon Department of Transportation and the Bureau of Land Management have partnered on to bulk locally sourced native species for restoration projects. The tour includes viewing grow-out fields at the nursery to see several vernal pool native species, including fields of Cook's lomatium and large flowered woolly meadowfoam.

We met at "Area B" on the nursery at 1 pm. There we had a set of introductions from Paul Benton, John Justin, Wayne Rolle, Jason McNeal and Doug Kendig regarding the nursery's partnership with ODOT and BLM to propagate and "bulk" seed for the two listed vernal pool associated plants, large-flowered woolly meadowfoam (*Limnanthes pumila* ssp. *grandiflora*) and Cook's lomatium (*Lomatium cookii*). (see Map).



Vernal Pool Information Network, March 25, 2015 Site Visit Summary

Background: The J. Herbert Stone Nursery was established in 1978 by the USFS on approximately 390 acres. It is the largest of six nurseries in the USFS system and supplies plants to the western United States. The primary mission is to provide conifers for reforestation actions. Since 1978 the nursery has supplied more than 400 million trees.

In the mid 1990's the nursery also started native grass and forb seed propagation. In 2012 the nursery partnered with ODOT to bulk seed large-flowered woolly meadowfoam and Cook's lomatium. The seeds produced here are used by ODOT to restore vernal pool habitat associated with ODOT projects in the local area.

Bulk seed program results: ODOT was hoping to increase seed production, lower cost of seed harvest and generate a reliable seed source for planned vernal pool restoration actions. Harvesting seed from wild plants is limited to no more than 10 percent of the annual seed production of a population. It is also time consuming and expensive.

After two years of growing these plants from seed, it appears that seed germination, plant survival and production have increased compared to what wild populations of the plants are experiencing:

- Meadowfoam is experiencing higher germination rates (20% [approximately 12% for first year; approximately 8% for second year]) vs 2% in the wild).
- Meadowfoam plants are producing more flowers (250 vs 4 to 20 in the wild).
- Meadowfoam flowers are producing more seeds (4 to 5 seeds per flower vs 1 to 5 seeds in the wild).
- Lomatium is experiencing higher seed germination rates (45% vs 15%)
- Lomatium plants are flowering at an earlier age (2 years vs 5 years in the wild).
- Lomatium plants are more robust than wild plants (more flowers and larger plants).

These increases in germination, survival and production are resulting in higher than anticipated seed bulking results. Approximately 80 pounds of seed were produced from the meadowfoam grow-outs and 20 pounds of seed was produced from the lomatium grow-outs.



Photo: Paul Benton, in red hat, describing propagation of Cook's lomatium at the J. Herbert Stone Nursery 3-25-15. Photo taken by Craig Tuss.



Photo of large-flowered woolly meadowfoam plot at J. Herbert Stone Nursery. Photo taken by Craig Tuss.

Summary: While ODOT and the nursery were hoping for greater seed production than what can be obtained in the wild, they are pleasantly surprised by the results they have seen after a few years of the seed bulking program. On March 31, 2015, the Medford Mail Tribune posted an article regarding the seed propagation effort at the nursery. It is included on the next page:

Future VPIN Site Visits

In July 2014, The Service provided funding (\$5,000) to RVCOG to convene several more VPIN site visits. RVCOG also has applied for education and outreach funding (\$2,500) from the Jackson Soil and Water Conservation District to augment the Service funding for the site visits. This funding, along with in-kind staff time from RVCOG (\$500) and TNC (\$600) will allow the VPIN to continue site visits and landowner outreach into the fall of 2015.

- SOLC Rogue River Preserve May 6, 2015
- The VPMCB in fall 2015.
- Table Rocks (BLM) in fall 2015.



Paul Benton, Oregon Department of Transportation wetlands specialist, walks Friday along a 900-foot-long row of extremely rare large-flowered woolly meadowfoam at the federal J. Herbert Stone Nursery. Benton is growing the plants to collect seeds for vernal pool mitigation. Mail Tribune / Jamie Lusch

**By Mark Freeman
Mail Tribune**

Posted Mar. 31, 2015 at 12:01 AM

CENTRAL POINT — Paul Benton looks down a 900-foot-long row of large-flowered woolly meadowfoam and he's seeing more of this endangered and extremely rare plant than most botanists could possibly see in their lifetimes.

"That's why it's called meadowfoam, because it's supposed to be like sea foam in a meadow," says Benton, an Oregon Department of Transportation wetlands specialist. "In the wild, though, it's not. But here, it's cool to see."

The federal J. Herbert Stone Nursery is finding great success in growing this huge swath of meadowfoam along with a massive patch of another endangered and rare plant, Cook's lomatium, as part of a project to seed new vernal pools with these rare native species.

The plants are grown so Benton can harvest their seeds and scatter them in a 44-acre chunk of Agate Desert that's being turned into vernal pool habitat as mitigation for filled-in vernal pools as part of ODOT's planned Highway 62 bypass.

Now in their second year of growing plants at the nursery, Benton and his crews have found that the meadowfoam thrives so well in this controlled environment that they literally are raking the seeds in.

Vernal Pool Information Network, March 25, 2015 Site Visit Summary

"It grows in a very harsh environment, but you bring it here and baby it, it goes crazy," Benton says.

"Last year, we got 90 pounds of (meadowfoam) seeds off 1/10th of an acre and that (row) should be about 180 pounds this year," he says. "Harvesting with a rake and filling hoppers is so cool."

Benton is charged with recreating vernal pools in a 44-acre portion of a 63-acre ODOT mitigation site off Truax Road, where vernal pools were filled in to make grazing land in the 1920s. The work includes scattering seeds from about 20 different native plants, including these two endangered plants.

Large-flowered woolly meadowfoam is found only in the Agate Desert. Cook's lomatium, also known as Cook's desert parsley, is native to the Agate Desert and also is found in the French Flat area of the Illinois Valley in Josephine County.

The mitigation plans require that 200 meadowfoam plants and 3,400 Cook's lomatium become established at the site, and for the first two years of the mitigation, Benton collected the seeds from wild plants. But that proved very difficult and time-consuming because the wild sites had to be painstakingly inventoried to ensure that no more than 10 percent of the wild seeds were collected.

In 2012, he contracted with Stone to give it a whirl. The plants get watered and fertilized and then they are left to their natural devices to produce seeds, which were first collected last spring and summer.

In the wild, a single meadowfoam plant will have four to 20 flowers and each flower will produce one to five seeds, Benton says. At Stone, individual plants are sporting around 250 flowers with four to five seeds per flower, he says.

In the wild, only 2 percent of scattered meadowfoam germinate, while the rate is 12 percent at Stone, Benton says.

"Occasionally you run into a species that doesn't like to be treated nicely," nursery Manager John Justin says. "A lot of species, when you plant them in a nursery environment, they thrive."

The Cook's lomatium is also faring extremely well, once Benton built a chicken-wire fence around the 320-foot-long plot to keep the rabbits at bay.

Now this plant that can live for 40 years is growing in three years what it would in decades on its own in the Agate Desert, Benton says. It's also flowering at age 2 instead of the more typical age 5, he says. Under the mitigation contract, the site must be monitored for a decade after it is completed, so Benton will continue to grow the seed-plants during that monitoring period to ensure there are seeds for spreading should mitigation plants die.

He expects to have plenty of seeds for other uses in the region.

"We had no idea it would be this successful when we started," Benton says.