



The Oregonian

A horticultural treasure

From its plants to its conservation research, The Berry Botanic Garden is a gem

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The six-acre garden is tough to find in the ritzy Dunthorpe neighborhood. No signs mark the narrow lane to The Berry Botanic Garden, leaving many Portlanders unaware of the horticultural jewel in their backyard.

Despite its modest size and lack of local recognition -- a zoning rule bans signs and visits without an appointment -- "The Berry" has earned international esteem for helping to save many of the Northwest's native plants from extinction.

The 30-year-old nonprofit institution -- long known as a haven for plant aficionados -- has become a dynamic research center known for its pioneering techniques that are aiding plant conservationists worldwide.

At the heart of its preservation efforts is a state-of-the-art seed bank that houses nearly 3 million seeds representing more than 300 imperiled plants from Oregon, Washington, Idaho and northern California. Launched in 1984, the seed bank is believed to have been the first such facility devoted exclusively to saving a region's most vulnerable plants.

The Berry provides seeds and seedlings for state and federal agencies to reintroduce or expand imperiled plant populations.

"We're an insurance policy," said Ed Guerrant, the garden's conservation director. "We're preserving options to keep these vulnerable plants alive. If a particular species does go extinct in the wild, then we have the material to restore them."

The seeds are housed in a 7-by-9-foot climate-controlled vault with 8-inch-thick insulated walls. The fireproof room is kept at a constant 59 degrees Fahrenheit and 22 percent humidity.

Seeds collected from the wild are dried, cleaned, weighed and placed in protective packets before being placed in a freezer kept at 0 degrees F.

"These seeds can stay in storage for decades, maybe even centuries," said Guerrant, who has a doctorate in botany from the University of California at Berkeley. "We've become a critical resource for the much larger conservation community."

Guerrant and botanist Andrea Raven research the best techniques to preserve and germinate seeds. Seeds are germinated in chambers where the light and temperatures can be adjusted to determine the best growing conditions.

Information from their work is shared with three dozen other organizations that belong to the national Center for Plant Conservation in St. Louis.

"The Berry's impact is much larger than their work with regional plants," said Kathryn Kennedy, executive director of the center, which focuses on preventing native plants' extinction. "They're guiding work by scientists elsewhere in saving vulnerable plants -- they're small, but very influential because of their commitment and expertise."

Kennedy said that about 2,000 U.S. native plant species -- roughly 10 percent of the nation's native flora -- are at risk of extinction, and about 20 percent are declining because of habitat destruction or being crowded out by invasive species.

The need for a conservation facility in plant-rich Oregon is evident from the roster of the state's imperiled plants: 17 are listed under the federal Endangered Species Act, and 61 plants are on the state's endangered and threatened list, according to the Oregon Natural Heritage Information Center.

The botanical garden, which began as the personal collection of avid gardener Rae Selling Berry, was established in 1978, two years after her death at age 96. Berry, who won numerous awards for her work, spent decades building the elaborate garden on her estate. The facility features lilies, primroses, rhododendrons and a large rock garden with alpine plants.

Guerrant and Raven, in addition to their specialty of "ex situ," or off-site, conservation work in the lab and seed bank, also study plants in their "in situ," or natural, habitats.

The botanic garden, which has been involved in several restoration programs in the past two decades, is working with federal agencies to restore five imperiled plants in their native habitat:

The Malheur wire lettuce, *Stephanomeria malheurensis*, became extinct in its only known habitat in remote southeastern Oregon. In the late 1980s, The Berry provided seedlings to the Bureau of Land Management and the U.S. Fish & Wildlife Service for what is believed to have been the first plant reintroduction attempt under the federal Endangered Species Act. A new reintroduction project in Harney County is under way.

Koehler's rockcress, *Arabis koehleri* var. *koehleri*, is a rare plant that lives on rocky cliffs in the Roseburg area. Working with the BLM, the garden will augment a protected population with plantings in the fall.

Umpqua mariposa lily, *Calochortus umpquaensis*, is on the state endangered list and is found only along the Umpqua River in southwestern Oregon. The Berry and U.S. Forest Service are working to boost the lily's population in the Umpqua National Forest.

Macfarlane's four-o'clock, *Mirabilis macfarlanei*, is listed as threatened on the federal list and endangered by Oregon. The botanic garden is working with the U.S. Forest Service to establish new populations of the plant in its native Hells Canyon in northeastern Oregon and western Idaho.

Western lily, *Lilium occidentale*, is found in coastal bogs from Coos Bay to northwestern California. The Berry Botanic Garden is working with the BLM to expand populations of the lily.

Guerrant, who was the lead author on the federal recovery plan for the endangered lily, said few wildflowers can rival the beauty of the red-and-yellow flower that attracts hummingbirds.

The Berry Botanic Garden recently named the Western lily as its Wild Flower of the Year for its public education program.

Joan Seevers, the BLM's state botanist, praised Guerrant and his colleagues for the decadelong work they've done in aiding the agency in starting and monitoring new populations of the lily.

"The Berry has been invaluable to the bureau in our plant recovery and conservation efforts," Seevers said. "They're an extremely important part of the conservation picture in Oregon."

Russell Holmes, regional botanist for the Forest Service, agrees. "We have all of the Oregon forests represented in their seed bank, with 153 species of rare plants that we have on our regional sensitive species list -- all of these rare plants occur in Oregon," Holmes said.

"They may be a small organization, but they're recognized for their work all over the country."

Guerrant is co-editor of a key guidebook for scientists in preserving rare plant species, "Ex Situ Plant Conservation: Supporting Species Survival in the Wild," and has written other scientific articles about the work.

The Berry no longer is the Northwest's only seed bank for rare plants. A new vault to store seeds from Washington state opened four years ago at the University of Washington's Center for Urban Horticulture.

"We now focus more on Oregon's rare plants," said Scott Vergara, a plant geneticist and The Berry garden's executive director. "Our goal is to make the public more aware of these unique Northwest plants that could one day no longer be around. That's what makes it fun and interesting to work here -- we feel we're filling a need and making a difference."

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