

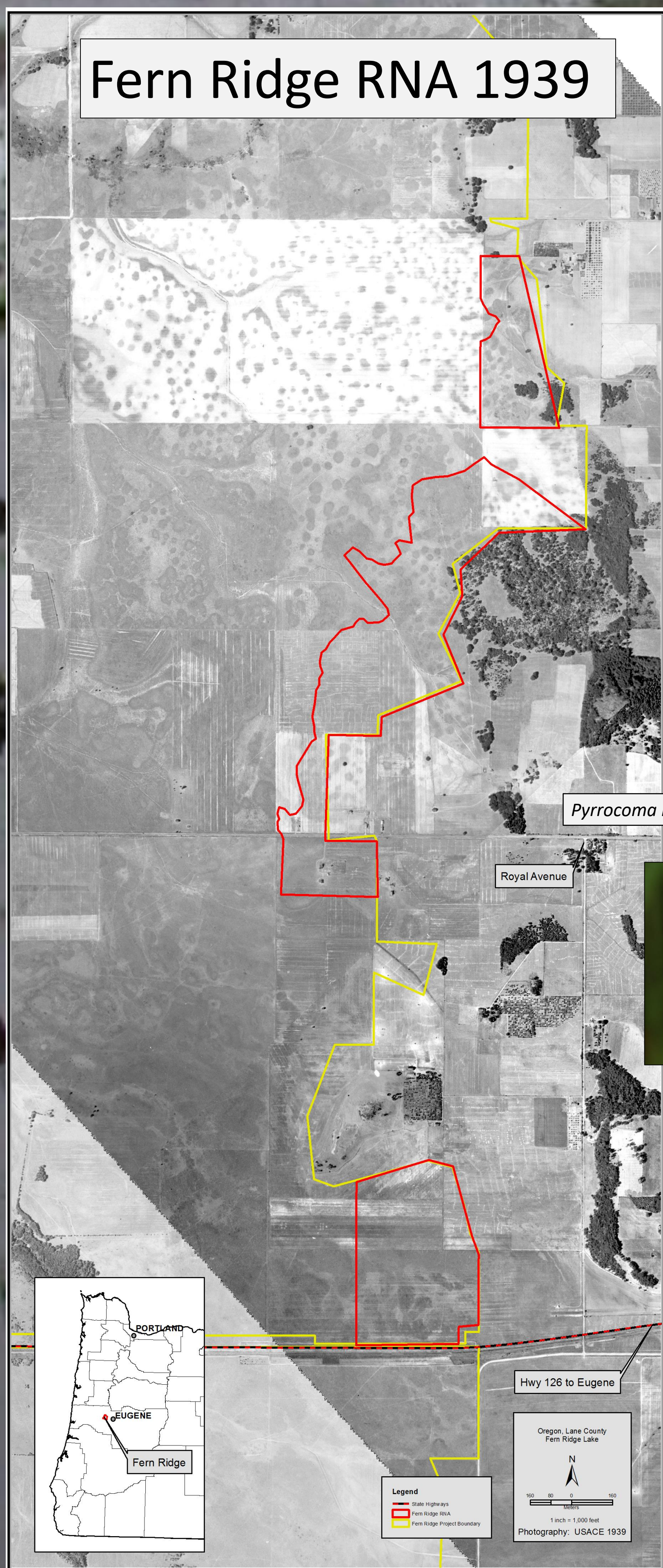
FERN RIDGE RESEARCH NATURAL AREA

Wes Messinger, Corps of Engineers Willamette Valley Project

Abstract

Public land provides benefits including species conservation, ecological function, and scientific knowledge. Authorized by Congress in 1939, the Corps of Engineers' Fern Ridge Project (Oregon, Lane County) includes nearly 5500 acres of marsh, wet and upland prairie, and deciduous forest: a significant quantity of publicly held habitat on the heavily utilized Willamette Valley floor. Following Heritage Program surveys in the 1980s, the Corps designated 250 acres of wet prairie as the Fern Ridge Research Natural Area. These sites comprise the only Corps of Engineers RNA, and one of two on the floor of the Willamette Valley. Other land use designations on these parcels include the Oregon Department of Fish and Wildlife Fern Ridge Wildlife Area and Critical Habitat for *Erigeron decumbens* and Fender's blue butterfly. The RNA supports 10 plant species of conservation concern including *Lupinus oregonus*, *Sericocarpus rigidus*, *Horkelia congesta*, the largest remnant population of *Erigeron decumbens*, and large numbers of *Lomatium bradshawii*. It is the type locality of *Amanita pruittii*, described in 2014. It supports nesting territories of Western Meadowlarks and Grasshopper Sparrows. Corps management is intended to sustain ecological processes including fire and to reduce the influence of exotic species. Two dozen studies on the RNA include seminal work on prescribed fire and *Lomatium bradshawii* demography. Current studies address prairie fungi communities, plant demographics, and exotic grass control against a background of prescribed fire.

Fern Ridge RNA 1939



Lomatium bradshawii (Endangered)



Erigeron decumbens (Endangered)



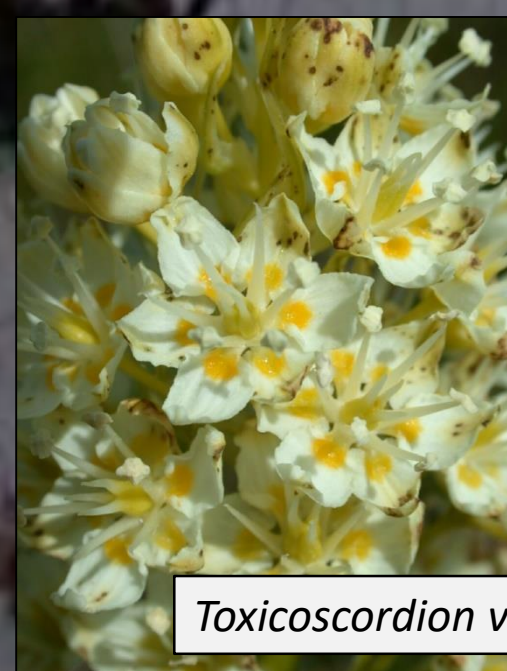
Pyrracoma racemosa var. *racemosa* (ORBIC list 2)



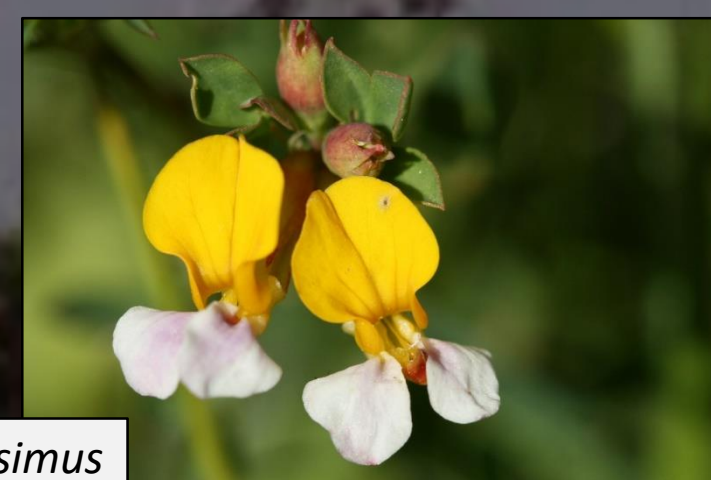
Horkelia congesta (ORBIC list 1)



Downingia yina



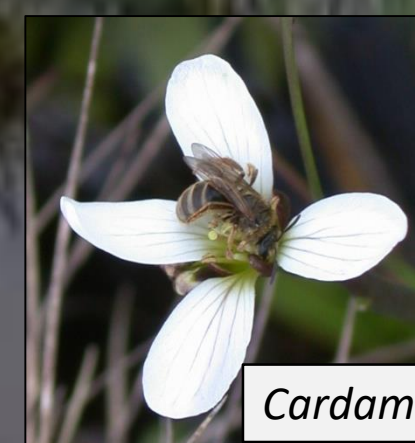
Toxicoscordion venenosum



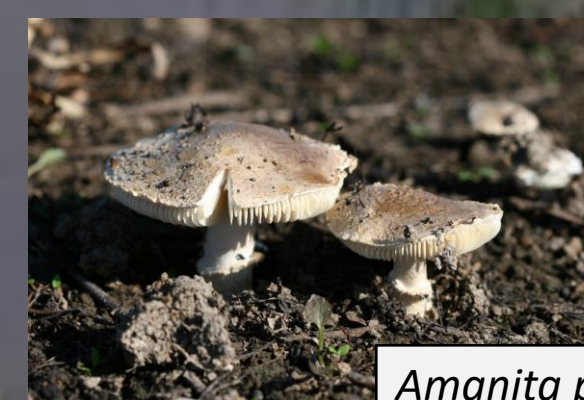
Lotus formosissimus



Orobanche californica var. *californica*



Cardamine penduliflora



Amanita pruittii

The Fern Ridge Research Natural Area was dedicated in 1988 by the Commander of the Portland District, U.S. Army Corps of Engineers. It serves the natural area system as a high quality example of remnant Willamette Valley wet prairie. Prior to acquisition by the Corps in 1939, the area was lightly used for grazing and haying. Early Corps management featured benign neglect until the '80s, when inventory revealed both rare plants (Bradshaw's lomatium and Willamette daisy), and a rare, diverse native plant community. Research here has yielded critical knowledge about fire effects to wet prairie plant communities and rare species, contributed to advances in plant demographics, and revealed information about prairie mammals, moths, mollusks, and mushrooms.

Administration

- Fee title Purchase by Corps 1939
- ODFW Fern Ridge Wildlife Area licensed 1960, 1982, 2006 – co-managed with Corps
- RNA dedicated 1988
- USFWS Critical Habitat Designated 2006

Ecology

- Seasonal wetland
- Fed by sheet flow in rainy season (no groundwater effect)
- Impermeable clay layer (probably Mt. Mazama volcanic ash) slows infiltration during rainy season; may account for mounded prairie in northern units
- *Deschampsia cespitosa* dominant with *Camassia quamash*; nearly 200 native plant spp.
- Likley maintained by anthropogenic fire prior to 1850s

Management

- Prescribed fire (attempt 3 year return interval based on *Lomatium bradshawii* demographic studies) reduces woody dominance, promotes native plant populations
- Integrated vegetation management, with herbicide use primarily targeting exotic species, especially reed Canary grass, feral pears, exotic blackberries and roses
- Manual treatment of Scotch broom by youth crews
- Closed to vehicles, horses, not pedestrians, hunters
- Research by permit



Fern Ridge RNA 2014



Microtopography and sheet flow, Royal Amazon unit

Some Research Using Fern Ridge RNA

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