

Kincaid's lupine (*Lupinus oregonus*)



THREATENED



Flowers (left), habit (center), and habitat (right) of Kincaid's lupine. Photos by Melissa Carr. If downloading images from this website, please credit the photographer.

Family

Fabaceae

Taxonomic notes

Synonyms: *Lupinus sulphureus* ssp. *kincaidii*, *Lupinus sulphureus* var. *kincaidii*, *Lupinus oregonus* var. *kincaidii*, Oregon lupine

The genus *Lupinus* poses many taxonomic challenges due to the extremely variable nature of the species and intergradations between recognized taxa, a situation that in many instances is likely the result of or complicated by free interbreeding that has obscured species boundaries. Hybridization is known to occur between Kincaid's lupine and *Lupinus arbustus*.

Plant description

Kincaid's lupine is a perennial arising from a branched crown, usually with numerous unbranched stems (30) 40-80 (100) cm tall, with whitish or brownish stiff to silky pubescence. Basal leaves are usually persistent until after flowering, with petioles (2) 3-5 times the length of the blades; upper cauline leaves have petioles sometimes shorter than the blades. Leaflets typically number 7-12, are narrowly oblanceolate, usually somewhat acute, 2.5-5 cm long, often remaining somewhat folded, and usually glabrous above and sparsely to copiously hairy beneath. Inflorescences are slender, the flowers numerous and arranged in interrupted whorls. Flowers are fragrant and range in color from bluish or purple to yellowish or creamy white, quickly turning orange-brown with age. The banner is distinctively ruffled (markedly concave on the lateral faces), glabrous, and only somewhat reflexed from the glabrous keel. Pods are 3-4 cm long, with 1-6 pinkish-brown to black seeds.

Distinguishing characteristics

Several other perennial species of *Lupinus* overlap in range with Kincaid's lupine: *L. arbustus*, *L. polyphyllus*, *L. albicaulis*, *L. albifrons*, *L. lepidus*, *L. latifolius*, and *L. rivularis*. *Lupinus arbustus* is distinguished by its distinctly spurred calyx (versus calyx not spurred) and flowers with banners that are hairy on the back (versus glabrous) and

distally ciliate keels (versus glabrous keels), *L. polyphyllus* has larger leaflets 5-10 cm long (versus 2.5-5 cm), *L. albicaulis* has leaves with copiously pubescent upper surfaces (versus usually glabrous) and flower banners that lack a distinct ruffle (versus distinctly ruffled), *L. albifrons* has flower banners that are densely pubescent on the back and well reflexed from ciliate keels (versus banners glabrous on the back and only somewhat reflexed from glabrous keels), *L. lepidus* plants are shorter (usually 10-35 cm tall versus usually taller than 40 cm) and its flowers have ciliate keels (versus glabrous), and *L. latifolius* and *L. rivularis* both have branched stems (versus usually unbranched stems) and flowers with banners fairly well reflexed from ciliate keels (versus only somewhat reflexed from glabrous keels). Hybrids between Kincaid's lupine and *L. arbustus* have been documented and may exhibit a spurred calyx.

When to survey

Surveys should be completed when the species is flowering, typically from mid April through June.

Habitat

Kincaid's lupine is found in upland prairie remnants and ecotones between grassland and forest. It usually occurs in heavy, well-drained soils at elevations below 838 m (2750 ft).

Commonly associated native plant species include: *Agoseris grandiflora*, *Arbutus menziesii*, *Balsamorhiza deltoidea*, *Brodiaea coronaria*, *Bromus carinatus*, *Calochortus tolmiei*, *Cryptantha intermedia*, *Danthonia californica*, *Delphinium menziesii*, *Elymus glaucus*, *Eriophyllum lanatum*, *Festuca idahoensis*, *F. roemerii*, *Fragaria vesca*, *F. virginiana*, *Holodiscus discolor*, *Iris tenax*, *Lomatium triternatum*, *L. utriculatum*, *Luzula comosa*, *Madia gracilis*, *Potentilla gracilis*, *Pseudotsuga menziesii*, *Pteridium aquilinum*, *Sanicula crassicaulis*, *Silene hookeri*, *Symphoricarpos mollis*, *Toxicodendron diversilobum*, and *Whipplea modesta*. Commonly associated invasive plants include *Arrhenatherum elatius*, *Brachypodium sylvaticum*, *Dactylis glomerata*, *Festuca arundinacea*, *Rubus armeniacus*, and *Cytisus scoparius*.

Range

Kincaid's lupine occurs west of the Cascade Range from Douglas County, Oregon north to Lewis County, Washington, with the majority of populations located in the Willamette Valley. There are historic records of the species from Oak Bay, Victoria, British Columbia, but the last collection from this area was made in 1929, and the species is now considered extirpated in Canada. Kincaid's lupine occupies the Klamath Mountains, West Cascade Range and Crest, and Willamette Valley ecoregions.

Oregon counties

Benton, Douglas, Lane, Linn, Marion, Polk, Washington, Yamhill

Federal status

Threatened

Threats

Major threats to Kincaid's lupine include habitat loss due to urbanization, agriculture, forestry practices, and roadside maintenance; competition from non-native plants; and successional encroachment by woody plants due to changes in historic disturbance regimes. Hybridization between Kincaid's lupine and other co-occurring lupine species may lead to increased resource competition and genetic swamping of the rare parent genes. Crosses between Kincaid's lupine and *Lupinus arbustus* have been documented

at one site. Other factors that may negatively impact Kincaid's lupine include seed, fruit, and flower predation by insects and inbreeding depression due to habitat fragmentation and small population sizes.

Conservation planning

A [Critical Habitat Designation](#) (pdf document, 2.60 MB) for Kincaid's lupine was issued by the U.S. Fish and Wildlife Service in 2006.

A U.S. Fish and Wildlife Service [Recovery Plan for prairie species of western Oregon and southwestern Washington](#) (pdf document, 9.63 MB) was released in 2010 and addresses conservation needs of Kincaid's lupine.

A U.S. Fish and Wildlife Service [5-Year Review](#) (pdf document, 584 kB) for Kincaid's lupine summarizing conservation issues was released in 2010.

Kincaid's lupine is the primary larval host plant of the federally endangered Fender's blue butterfly (*Icaricia icarioides fenderi*) and recovery efforts for these species should be coordinated. Kincaid's lupine may benefit from additional regulations associated with conservation of the butterfly at sites where the species co-occur.

Did you know?

Kincaid's lupine reproduces both by seed and by vegetative spread through rhizome growth. Individual clones can live for several hundred years and become very large. Excavations and morphology indicate that a clone can exceed 10 meters (33 feet) across, and plants 10 meters (33 feet) or more apart can be connected by subterranean stems. This complicates population monitoring, as it is difficult to distinguish genetically distinct individuals. Because of this, current monitoring best practices recommend counting square meters of Kincaid's lupine coverage, rather than individual plants.

Current/Recent ODA projects

Developing population density estimates for nine rare Willamette Valley prairie species

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