

Cascade Head catchfly (*Silene douglasii* var. *oraria*)



THREATENED



Flower (left), habit (center), and habitat (right) of Cascade Head catchfly. Photos by Erin Amsberry Abood (left and right) and Rebecca Currin (center). If downloading images from this website, please credit the photographer.

Family

Caryophyllaceae

Taxonomic Notes

Synonyms: *Silene oraria*

Plant description

Cascade Head catchfly is a taprooted, tufted perennial arising from a branched, subterranean caudex, with numerous decumbent, simple stems (5-) 10-40 (-50) cm tall, the plants finely and densely pubescent. Leaves are fleshy, mostly matted at the base of stems and on new shoots, generally oblanceolate, acute, and 2-5 (-8) cm long by 3-13 mm wide, the cauline leaves in pairs of 1-8 and reduced only slightly if at all. Flowers are arranged usually 1-7 in an open cyme. Calyces are strongly inflated, (4-) 7-10 (-12) mm in diameter at anthesis, and (1-) 1.2-1.5 cm long with 5 obtuse teeth. Petals are white, greenish, pink, or purplish tinged, the petal claw slightly longer than the calyx and sometimes auriculate, the petal limb 4-13 mm long by 5-11 mm wide, deeply bilobed, and often with a lateral tooth on each side, each petal with a pair of appendages 1-2 (-3) mm long. The fruit is a 1-celled capsule.

Distinguishing characteristics

Silene douglasii var. *oraria* most closely resembles the two other varieties of *S. douglasii*, var. *douglasii* and var. *rupinae*. However, Cascade Head catchfly is distinguished by its typically broader, fleshy leaves 3-13 mm wide (versus leaves not fleshy, 2-9 mm wide in var. *douglasii* and 1.5-5 mm wide in var. *rupinae*); its strongly inflated calyx (4-) 7-10 (-12) mm in diameter at anthesis (versus calyces narrower, (3-) 5-8 (-10) mm in diameter in vars. *douglasii* and *rupinae*); its larger flowers, with petal limbs 5-11 mm wide and often with a lateral tooth on each side (versus petal limbs 1-5 mm wide and usually not toothed in vars. *douglasii* and *rupinae*); and its restricted geographic range within coastal habitat in Tillamook County, Oregon (versus range widespread throughout coastal and interior mountains in western North America).

for var. *douglasii* and range restricted to the Columbia River Gorge in Oregon and Washington for var. *rupinae*).

Three other species of *Silene* occur within or near the range of *S. d.* var *oraria*: *S. gallica*, *S. scouleri* ssp. *scouleri*, and *S. vulgaris*. *Silene gallica* is readily distinguished from the rare Cascade Head catchfly by its annual nature (versus perennial); stems that are erect, usually branched, and distally viscid-glandular (versus stems decumbent, simple, usually eglandular); and small flowers, the petal limbs to 6 mm long, arranged in several- to many-flowered racemelike cymes (versus large flowers, limbs 4-13 mm long, arranged 1-7 per cyme). *Silene scouleri* ssp. *scouleri* has tubular to narrowly campanulate calyces 3.5-5 mm in diameter at anthesis (versus strongly inflated calyces (4-) 7-10 (-12) mm in diameter at anthesis), and narrow, elongate cymose inflorescences with 4-12 nodes, each node with crowded pseudowhorls of 5-20 flowers (versus open cymose inflorescences bearing 1-7 flowers). *Silene vulgaris* is glabrous throughout, or rarely pubescent with short, stiff hairs, and glaucous (versus finely and densely pubescent, not glaucous), and has stems that are usually branched, reaching to 1 m tall (versus stems usually simple, typically less than 0.5 m tall), and inflorescences bearing 5-40 flowers (versus inflorescences with 1-7 flowers).

When to survey

Surveys should be completed when the species is flowering, beginning in late April to early May and continuing through August.

Habitat

Cascade Head catchfly is a grassland species found on steep coastal bluffs, ledges, and slopes facing the ocean at elevations ranging from 46-460 m (150-1500 ft). Plants occur among rocky outcrops in areas characterized by shallow soils, exposed bedrock, and low vegetation, as well as in grassy meadows characterized by deeper soils and denser vegetation cover. Demographic studies indicate that Cascade Head catchfly exhibits higher population densities, lower adult mortality, and more juvenile plant recruitment in rocky areas than in grassy meadows, though plants established in grassy meadows are typically larger than those in rocky sites.

Commonly associated native plant species include *Castilleja affinis* ssp. *litoralis*, *Clarkia amoena*, *Delphinium menziesii*, *Eriophyllum lanatum*, *Festuca rubra*, *Koeleria macrantha*, and *Packera bolanderi*.

Range

Cascade Head catchfly is known only from three sites ranging from southern to northern Tillamook County in northwestern Oregon: Cascade Head Preserve, Cape Lookout State Park, and Oswald West State Park. Cascade Head Preserve, managed by The Nature Conservancy, hosts the largest known occurrence of Cascade Head catchfly, with over 1,000 plants. The other two sites support fewer than 100 plants each.

Oregon counties

Tillamook

Federal status

Species of Concern

Threats

Historically, habitat loss and fragmentation due to anthropogenic disturbances have been major threats to native grassland species. Presently, Cascade Head catchfly is at

risk from recreational use of coastal lands, competition from invasive weeds, successional encroachment by woody species, low realized seed-set, inbreeding depression, and limited genetic diversity due to small population sizes.

Did you know?

Cascade Head catchfly was first collected by Morton Peck in 1926 on Cascade Head. He later described the taxon as a new species, *Silene oraria*, based on a second collection he made at this site in 1930. In 1947, the taxon was reduced to a variety of *Silene douglasii* by Hitchcock and Maguire. It was thought to be restricted to Cascade Head until Jean Siddall discovered the taxon at Cape Lookout in 1977.

References

Hitchcock, C. L., A. Cronquist, M. Ownbey, and J. W. Thompson. 1964. Vascular plants of the Pacific Northwest. Part 2: Salicaceae to Saxifragaceae. University of Washington Press, Seattle.

Hitchcock, C. L. and B. Maguire. 1947. A revision of the North American species of *Silene*. University of Washington Publications in Biology 13:1-73.

Kephart, S. R. 2004. Inbreeding and reintroduction: Progeny success in rare *Silene* populations of varied density. Conservation Genetics 5:49-61.

Kephart, S. R., E. Brown, and J. Hall. 1999. Inbreeding depression and partial selfing: Evolutionary implications of mixed-mating in a coastal endemic, *Silene douglasii* var. *oraria* (Caryophyllaceae). Heredity 82:543-554.

Kephart, S. R. and C. Paladino. 1997. Demographic change and microhabitat variability in a grassland endemic, *Silene douglasii* var. *oraria* (Caryophyllaceae). American Journal of Botany 84:179-189.

Kephart, S. and K. Sturgeon. 1993. A new varietal designation in *Silene douglasii*. Madroño 40:90-100.

Kephart, S., K. Sturgeon, J. Lum, K. Bledsoe. 1999. Varietal relationships in *Silene douglasii* (Caryophyllaceae): Morphological variability at the population level. Systematic Botany 24:529-544.

Meinke, R.J. 1982. Threatened and endangered vascular plants of Oregon: An illustrated guide. Unpublished report for the U.S. Fish and Wildlife Service, Region 1, Portland, Oregon. Oregon Department of Agriculture, Salem, Oregon.

Morton, J. K. 2005. *Silene*. In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 16+ vols. New York and Oxford. Vol. 5, pp. 166-214. Available at http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=130349. Accessed October 3, 2011.

OFP (Oregon Flora Project). 2010. Oregon Plant Atlas. <http://www.oregonflora.org/atlas.php>. Accessed September 30, 2011.

ORBIC (Oregon Biodiversity Information Center). 2010a. Rare, threatened and endangered species of Oregon. Institute for Natural Resources, Portland State University, Portland, Oregon. 105 pp. Available at <http://orbic.pdx.edu/documents/2010-rte-book.pdf> (pdf document, 971 kB). Accessed December 10, 2010.

ORBIC (Oregon Biodiversity Information Center). 2010b. ORBIC element occurrence database. Portland, Oregon.

Siddall, J. L. and K. L. Chambers. 1978. Status report for *Silene douglasii* var. *oraria*. Unpublished report prepared for U.S. Fish and Wildlife Service.