

Arrow-leaf thelypody (*Thelypodium eucosmum*)



THREATENED



Flowers (left), habit (center), and habitat (right) of arrow-leaf thelypody. Photos by Melissa Carr (left and right) and ODA staff (center). If downloading images from this website, please credit the photographer.

Family

Brassicaceae

Plant description

Arrow-leaf thelypody is a biennial or short-lived perennial arising from a spreading rootstock. Plants are glabrous (except for leaf petioles) glaucous, and often purplish. Stems are 2-10 dm tall, branched distally, and either simple or branched near the base. Basal leaf petioles are (0.9-) 1.4-3 (-4.5) cm long and ciliate, the blades (2.8-) 3.5-8.8 (-11) cm long by (0.7-) 1-2.5 (-3.5) cm wide, usually oblong to oblanceolate or lanceolate, or rarely ovate or elliptic, acute at the apex, the margins entire to wavy. Cauline leaves are ascending and sessile, the blades 1.8-4.5 (-6) cm long by 0.5-1.6 (-2.4) cm wide, lanceolate to oblong, the base completely clasping to strongly auriculate, margins entire. Flowers are arranged in a lax to somewhat densely-flowered raceme, slightly elongated in fruit. Flower buds are purple and oblong-linear. Sepals are lilac-purple, erect, and linear-oblong, 5-7 (-8) mm long by (0.8-) 1-1.5 (-1.8) mm wide. Petals are dark purple, spatulate to oblanceolate, and attenuate at the base, (6.6-) 7.5-10 (-11.5) mm long by 1-1.8 (-2) mm wide. Anthers are purplish, well exerted, and coiled from the tip downward when fully dehiscent. Siliques are narrowly linear, cylindrical, slightly constricted between the seeds, and straight to somewhat incurved, spreading to ascending, (2-) 2.4-5 (-6.5) cm long. Fruiting pedicels are straight or rarely curved, horizontal to spreading, (2.5-) 3-5.5 (-6.5) mm long, the gynophore (the elongated stalk bearing the pistil above the point of attachment of the calyx and corolla) (1-) 2.5-6 (-7.5) mm long in fruit.

Distinguishing characteristics

Arrow-leaf thelypody is readily distinguished from other *Thelypodium* species that occur in eastern Oregon by its combination of dark purple flowers, oblong-linear flower buds, exerted anthers, gynophores that are (1-) 2.5-6 (-7.5) mm long in fruit, basal leaf margins entire to strongly wavy, and cauline leaf bases completely clasping to strongly auriculate.

Thelypodium sagittatum and the subspecies of *T. howellii* have ovate to lanceolate flower buds, anthers partially to wholly included, and gynophores (0.2-) 0.5-1 (-3.5) mm long; Oregon subspecies of *T. integrifolium* have gynophores 0.5-1.2 (-3) mm long and cauline leaf bases cuneate to attenuate, not auriculate; *T. laciniatum* has petals white or purple, gynophores (0.5-) 1-5 (-8.5) mm long, and basal leaf margins pinnately lobed or irregularly lobed, the lobes wavy, irregular, or dentate; and *T. milleflorum* has white flowers, gynophores (0.5-) 1-4 (-6) mm long, and basal and lower leaf margins commonly coarsely dentate.

When to survey

Surveys should be completed when this species is flowering, from May through July, depending on conditions.

Habitat

Arrow-leaf thelypody occurs in shaded areas under junipers on dry slopes and in dry to moist areas in stream beds and along seeps and streams. It is found within juniper-sagebrush plant communities at elevations ranging from 500-1680 m (1640-5500 ft).

Associated plant species include *Artemisia tridentata*, *Balsamorhiza* spp., *Bromus mollis*, *B. tectorum*, *Ericameria nauseosa*, *Gutierrezia sarothrae*, *Hordeum murinum*, *Juniperus occidentalis*, *Lepidium* spp., *Purshia tridentata*, *Salix* spp., *Sarcobatus vermiculatus*, and *Urtica dioica*.

Range

Arrow-leaf thelypody is restricted to central and eastern Oregon within the Blue Mountains ecoregion. It has been reported from approximately 60 occurrences to date, which range from only a few plants to over 5,000 individuals. Populations appear to vary considerably in size and distribution from year to year. The majority of extant occurrences are located on lands managed by the Bureau of Land Management.

A few early publications indicated this species occurs in Idaho. However, this appears to be erroneous, as no known specimens have been collected outside Oregon, and authorities currently recognize arrow-leaf thelypody as an Oregon endemic.

Oregon counties

Grant, Wheeler, Baker (historic record)

Federal status

Species of Concern

Threats

This species is at risk from intensive grazing and trampling by livestock (largely on BLM lands), competition from invasive non-native plants, off-road vehicle use, erosion, and herbivory by deer and insects.

Did you know?

Arrow-leaf thelypody was first collected in Baker City, Oregon in 1875 by R. D. Nevius. This is the only known collection of the species from Baker County, and it does not appear to have been reported from the county since. Arrow-leaf thelypody was described by B. L. Robinson in 1895, based on Nevius' specimen from Baker City, as well as a specimen collected by T. Howell from the Blue Mountains in Grant County in 1885.

References

- Al-Shehbaz, I. A. 1973. The biosystematics of the genus *Thelypodium* (Cruciferae). Contributions from the Gray Herbarium of Harvard University 204:96-97.
- Al-Shehbaz, I. A. 2010. *Thelypodium*. In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 16+ vols. New York and Oxford. Vol. 7, pp. 728-738. Available at http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=132775. Accessed October 9, 2011.
- 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.
- 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.
- OFP (Oregon Flora Project). 2011. Oregon Plant Atlas. <http://www.oregonflora.org/atlas.php>. Accessed October 7, 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 13, 2010.
- ORBIC (Oregon Biodiversity Information Center). 2010b. ORBIC element occurrence database. Portland, Oregon.
- Robinson, B. L. 1895. In: Gray, A. and S. Watson, eds. Synoptical Flora of North America 1:175.