

Plant Diversity Website

Lathyrus palustris L.

Common Names: Slenderstem Peavine, Marsh Pea (-vine), Marsh Vetchling, Wing-stemmed Wild Pea-vine (3, 21).

Etymology: *Lathyrus* comes from the Greek word *lathyros*, which means a legume. *Palustris* comes from the Latin word, which means marshy or swampy (6).

Botanical synonyms (7,12):

Lathyrus incurvus Reichb.
Lathyrus macranthus (T.White) Rydb.
Lathyrus myrtifolius Willd.
Lathyrus occidentalis Nutt. Ex Torrey & A. Gray
Lathyrus paluster sensu auct.
Lathyrus pilosus Cham.
Orobus myrtifolius (Willd.) Hall
Orobus myrtifolius Alef.

FAMILY: Fabaceae (the pea family)

Quick Notable Features:

- Purple and white flowers
- Compound leaves with 2-4 pairs of leaflets
- Branched tendrils develop at the end of leaf
- Winged stem

Plant Height: The plant can grow to 1.2m (2).

Subspecies/varieties recognized (sources 12,21):

L. palustris var. *angustifolius* S. Watson;
L. palustris var. *angustus* Freyn;
L. palustris var. *canescens* Regel;
L. palustris var. *dasycarpa* Trautv.;
L. palustris var. *exalatus* (H.P.Tsui) X.Y. Zhu
L. palustris var. *graminifolius* S.Watson
L. palustris var. *heterophylloides* J. Schust.;
L. palustris var. *latifolius* Lambertye;
L. palustris var. *linearifolius* Ser.;
L. palustris var. *major* Hook.;
L. palustris subsp. *nudicaulis* (Willk.) P.W. Ball
L. palustris var. *macranthus* (T.White) Fern.
L. palustris var. *myrtifolius* (Willd.) A.Gray



L. palustris var. *nudicaulis* Willk.;
L. palustris var. *pilosus* (Cham.) Ledeb;
L. palustris var. *praesignis* Bäck;
L. palustris var. *pseudomyrtifolius* Kudô;
L. palustris var. *palustris*;
L. palustris subsp. *palustris*;
L. palustris subsp. *exalatus* H.B. Cui;
Lathyrus palustris subsp. *pilosus* (Cham.) Hultén
Lathyrus palustris L. var. *pubescens* (H.P.Tsui) X.Y.Zhu
Lathyrus palustris L. var. *retusus* Fern. & H. St. John

Most Likely Confused with: *Lathyrus palustris* closely resembles other species of *Lathyrus*, especially *Lathyrus tuberosus*. In addition, in Michigan other species of *Lathyrus* are *L. japonicus*, *L. latifolius*, *L. ochroleucus*, *L. pratensis*, and *L. sylvestris*. Also in the Fabaceae, this species might be confused with various species of *Vicia*.

Habitat Preference: Grows best in low prairies, stream valleys, lakeshores, and other damp places. It requires sunlight and moist or wet soil (1,2).

Geographic Distribution in Michigan: *L. palustris* exists in all the counties south of Bay county except: Allegan, Genesee, Huron, Ionia, Lepeer, Saginaw, Sanilac, and Tuscola. In other parts of the Lower Peninsula, it is present in the following counties: Alpena, Antrim, Benzie, Charlevoix, Cheboygan, Emmet, Grand Traverse, Iosco, Leelanau, Manistee, Mason, Presque Isle, and Roscommon. In the Upper Peninsula, it is found in Baraga, Beaver Is, Bois Blanc Is, Chippewa, Delta, Drummond Is, Houghton, Keweenaw, Luce, Mackinac, Menominee, and Schoolcraft (5).

Known Elevational Distribution: The species was collected at 2042m above sea level in Colfax, New Mexico (21).

Complete Geographic Distribution: *L. palustris* occurs naturally in Asia and northern Europe, and has been introduced into North America. It is present throughout North America except Florida, South Carolina, Alabama, Mississippi, Arkansas, Kansas, Montana, Idaho, Wyoming, Utah, Nevada, Arizona, Colorado, New Mexico, and Hawaii. It also exists in parts of Canada that border the USA (2,4,17).

Vegetative Plant Description: *Lathyrus palustris* is a perennial with stems that reach 0.2-1.2m in length. The stems are often winged and can be glabrous or sparsely puberulent. The stem is 1.3-3mm in diameter. The stipules are 1-3cm long, narrow, and sharp-pointed at both ends. The petioles are wingless and 0.5-2cm long. The leaves are alternate and pinnate, each ending in a branched tendril. There are usually 4-10 leaflets, each of which is linear to ovate. They are usually 3-8.5cm long, 0.7-2.3cm wide, and can be glabrous or sparsely pubescent. The roots are taproot and there are rhizomes that can fix nitrogen (1,9,13,14).

Climbing Mechanism: The plant climbs with branched tendrils that can be found at the terminating end of leaves, in place of a terminal leaflet. The tendrils usually have between two and five branches (1,9,15, pers. obs.).

Flower Description: The inflorescence is a long stalked raceme, including 2-8 flowers, the full inflorescence length is about the same length as the subtending leaf. The pedicels are 2-5mm in



length, and the petals are purple to violet. Each flower is perfect, has five sepals and five petals, and is 1.5-2.5cm long. Ten stamens and a single carpel complete the flower (1,2,13,14).

Flowering Time: In Wisconsin, the flowers bloom June-July (3), in Connecticut from June to August (20).

Pollinator: *L. palustris* is pollinated by insects, the type unspecified (2).



Fruit Type and Description: The fruit is a pod that has short red glandular hairs or is glabrous. It is 4-6cm long and 4-5mm wide. Each fruit has about 3-6 seeds (1,16).

Seed Description: The brown seed is 3-3.5mm long (1).

Dispersal Syndrome: Probably dispersed by gravity, and listed as “unassisted” by Lindborg (18).

Distinguished by: *L. palustris* is distinguished from *L. ochroleucus* by having purple flowers and winged stem. *L. tuberosus* has only two leaflets and flowers that are rose-red. *L. palustris* can mostly be distinguished from other *Lathyrus* species by flower color and number of leaflets (5). All species of *Lathyrus* can be distinguished from the species of *Vicia* by the hairs that clothe at least one entire side of the style. In *Vicia*, only a tuft of hair will be present, below the tip.

Other members of the family in Michigan (number species): *Amorpha* (2), *Amphicarpaea* (1), *Anthyllis* (1), *Apios* (1), *Astragalus* (3), *Baptisia* (4), *Caragana* (1), *Cercis* (1), *Chamaecrista* (2), *Cladrasis* (1), *Colutea* (1), *Crotalaria* (1), *Cytisus* (1), *Dalea* (1), *Desmodium* (12), *Genista* (1), *Gleditsia* (1), *Glycine* (1), *Gymnocladus* (1), *Hedysarum* (1), *Kummerowia* (1), *Lathyrus* (9), *Lespedeza* (13), *Lotus* (1), *Lupinus* (2), *Melilotus* (2), *Mimosa* (1), *Orbexilum* (1), *Phaseolus* (2), *Pisum* (1), *Pueraria* (1), *Robinia* (3), *Securigera* (1), *Senna* (1), *Strophostyles* (1), *Tephrosia* (1), *Trifolium* (9), *Vicia* (8), *Vigna* (1), *Wisteria* (1) (4,5).

Ethnobotanical Uses: The Ojibwa Indians feed the leaves of the plant to ponies to increase their body fat. The Meskwaki Indians use the root as a lure to trap beavers and other animals. Also, the peas of the plant are used as food by both the Chippewa and Ojibwa (8).

Phylogenetic Information: Fabaceae belongs to the order Fabales, which is closely related to Fagales, Cucurbitales, and Rosales within the clade, Eurosids I. Within Fabaceae, *L. latifolius* belongs to the subfamily, Faboideae (also known as Papilionoideae). Members of this subfamily are characterized by papilionaceous flowers. *L. latifolius* is included in the Faboideae tribe Fabeae (also known as Vicieae and thus close to the genus *Vicia*) (10,11).

Interesting Quotation or Other Interesting Factoid not inserted above: *Lathyrus palustris* is one of the few species of *Lathyrus* that show an interpopulational polymorphism for ploidy (chromosomal) levels. Diploid and hexaploid populations have been found for *L. palustris*. Through studies and isozyme analyses, it seems that *L. venosus* originated through allopolyploidy involving sympatric diploid species, *L. ochroleucus* and *L. palustris* (17).

Lathyrus palustris was one of 16 British plant species studied for distribution at scales of 1m to 100km. Although abundant in its typical marshy habitat, it was sparsely distributed across the British landscape overall (!8).

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- 1,2,3) The first three images (habit and flowers) are all courtesy of Janet Novak of the Connecticut Botanical Society, Gallery of wildflowers, <http://www.ct-botanical-society.org/galleries/lathyruspalu.html>
- 4) The seed image is courtesy of the USDA and NRCS: The PLANTS Database (<http://plants.usda.gov>, 5 February 2010). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

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