

California Pest Rating Proposal for

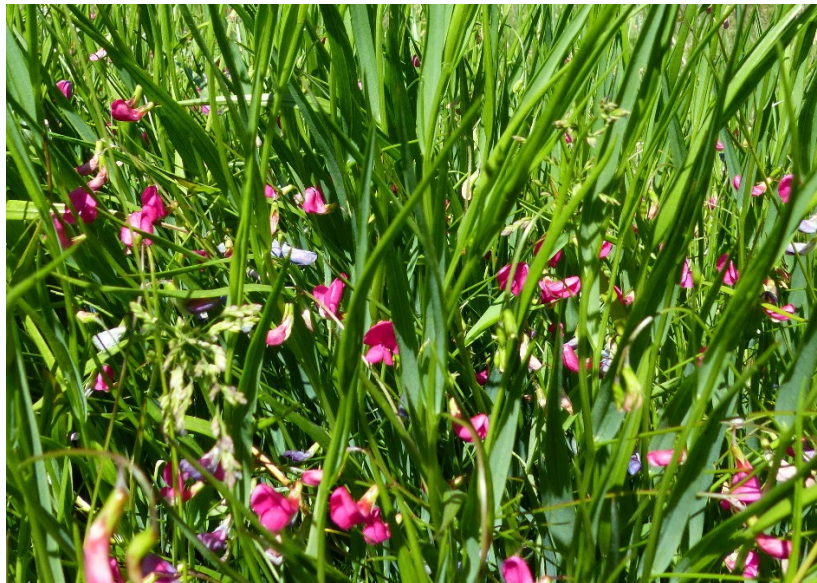
Lathyrus nissolia L. grass vetchling, grass pea

Family: Fabaceae subfamily Faboideae

Current Pest Rating: Q

Proposed Pest Rating: B

Photo credit: G. Hulse-Stephens



Comment Period: 09/13/2022 through 10/28/2022

Initiating Event:

Lathyrus nissolia was officially identified at CDFA from a specimen submitted from a naturalized population in Mendocino County. It has been assigned a temporary rating of “Q” and a pest rating proposal is required to evaluate the current rating and status of the species in California.

History & Status:

Background:

Lathyrus nissolia is an ascending to erect, glabrous or sparsely pubescent annual herb approximately 0.3-0.9 meters in height (Ball, 1968). The stems are unwinged. The leaves lack leaflets or tendrils, and the petiole and leaf axis form a narrow grass-like phyllode up to 1.3 cm in length, giving the plant an inconspicuous grass-like appearance until flowers are produced, enhanced by the presence of very short (up to 2 mm) stipules at the base of the leaf. The flowers are borne singly or in pairs on long-stalked racemes in the leaf axils. The papilionoid flowers have pinkish to reddish-purple or crimson corollas approximately 1-1.5 cm in length. The narrow legume fruits are approximately 3-6 cm long and 2-4 mm wide, brownish, and bear up to 20 seeds at maturity. The seeds are suborbicular to cuboidal in shape and up to 2.5 mm in length, reddish brown to blackish with a minutely bumpy surface and a short hilum representing about 9 percent of the circumference (Gunn, 1970).

Worldwide Distribution: *Lathyrus nissolia* is a plant of grassland habitats, native in Europe to the south of Scandinavia, western Asia and the Caucasus, and north Africa (Algeria, Morocco, Tunisia). It is naturalized in parts of Australia and New Zealand and has been found in limited areas of the western United States (USDA/GRIN, 2022; Plants of the World Online, 2022). It was reported to be locally established in the Willamette Valley of northwestern Oregon by Gunn (1970), but is now considered to be only an uncommon waif or garden escape in Oregon and Washington by Giblin et al. (2018).

Official Control: *Lathyrus nissolia* has not been listed as a noxious weed or weed seed in the United States (USDA PLANTS database, 2022; USDA/AMS, 2022). It has had an assessment as a potential environmental weed by the Australian state of Victoria (Agriculture Victoria, 2022).

California Distribution: The species was reported as spontaneous in a garden in Santa Rosa in Sonoma County in 2003, possibly from prior cultivation as an ornamental, and as a newly naturalized plant in fields and slopes near Highway 101 in the Willits area of Mendocino County beginning in 2020 (CalFlora, 2022; CDFA PDR database, 2022; Consortium of California Herbaria, 2022). An additional population in the area of Healdsburg in Sonoma County has recently been documented in 2022 (CDFA PDR database, 2022).

California Interceptions: No interceptions at border inspection stations have been recorded in the CDFA PDR database (2021).

Consequences of Introduction

1) **Climate/Host Interaction:** Score is **Medium (2)**

In its native range in Eurasia and north Africa, *Lathyrus nissolia* occurs in grassy habitats in many countries (Ball, 1968). In England it is found in open or disturbed habitats such as grassy slopes, roadcuts, woodland edges, and coastal grasslands on chalk and calcareous clay soils (Online Atlas of the British and Irish Flora, 2022).

- Low (1) Not likely to establish in California; or likely to establish in very limited areas
- **Medium (2) may be able to establish in a larger but limited part of California**
- High (3) likely to establish a widespread distribution in California

2) Known Pest Host Range: Score is High (3)

Lathyrus nissolia can occur wherever general ecological conditions exist that are conducive to its survival.

- Low (1) has a very limited host range
- Medium (2) has a moderate host range
- **High (3) has a wide host range**

3) Pest Dispersal Potential: Score is Low (1)

Lathyrus nissolia reproduces only by seed and has limited numbers of flowers per plant. It produces up to 20 seeds per fruit, and under favorable conditions can produce 100 or more seeds per plant. The seeds do not have specific adaptations for dispersal but may be spread from the area of the parent population by human or animal activity, by water, or in soil, and the experience in England is that they may be spread at larger distances as a reclamation or agricultural seed contaminant if the species becomes established. Spread and establishment of the species in the Pacific Northwestern states of the U.S. has evidently been quite limited despite introduction into Oregon prior to 1970 (Giblin et al., 2018; Gunn, 1970).

Evaluate the natural and artificial dispersal potential of the pest.

- **Low (1) does not have high reproductive or dispersal potential**
- Medium (2) has either high reproductive or dispersal potential
- High (3) has both high reproduction and dispersal potential

4) Economic Impact: Score is High (3)

Lathyrus nissolia has a grass-like upright growth form and can grow inconspicuously intermixed with grasses in rangeland areas until the plant starts to flower. This species and other members of the genus *Lathyrus* produce seeds that when ingested in significant amounts can be highly toxic to horses and other livestock due to the presence of non-protein amino acids and related compounds, causing a syndrome of neurological symptoms designated as “lathyrism” (Kingsbury, 1964). The foliage of plant before the seeds are produced is less toxic to livestock, however, and is used as a protein-rich source of fodder for livestock in Europe (Plants of the World Online, 2022).

- A. The pest could lower crop yield.
 - B. The pest could lower crop value (includes increasing crop production costs).**
 - C. The pest could trigger the loss of markets (includes quarantines).
 - D. The pest could negatively change normal cultural practices.**
 - E. The pest can vector, or is vectored, by another pestiferous organism.
 - F. The organism is injurious or poisonous to agriculturally important animals.**
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G. The organism can interfere with the delivery or supply of water for agricultural uses.

Economic Impact B, D, F:

- Low (1) causes 0 or 1 of these impacts
- Medium (2) causes 2 of these impacts
- **High (3) causes 3 or more of these impacts**

5) Environmental Impact: Score is High (3)

Lathyrus nissolia is currently acting as an invasive plant in moist meadows in the Willits area of Mendocino County, where it appears to be negatively impacting a population of North coast semaphoregrass, *Pleuropogon hooverianus*, a threatened California endemic species.

- A. The pest could have a significant environmental impact such as lowering biodiversity, disrupting natural communities, or changing ecosystem processes.**
- B. The pest could directly affect threatened or endangered species.**
- C. The pest could impact threatened or endangered species by disrupting critical habitats.
- D. The pest could trigger additional official or private treatment programs.**
- E. The pest significantly impacts cultural practices, home/urban gardening or ornamental plantings.

Environmental Impact A, B, D:

- Low (1) causes none of the above to occur
- Medium (2) causes one of the above to occur
- **High (3) causes two or more of the above to occur**

Consequences of introduction to California for *Lathyrus nissolia*: **Medium (12)**

Low = 5-8 points

Medium = 9-12 points

High = 13-15 points

1) Post Entry Distribution and Survey Information: Score is Low (1)

- Not established (0) Pest never detected in California or known only from incursions.
- Low (-1) Pest has a localized distribution in California or is established in one suitable climate/host area (region).**
- Medium (-2) Pest is widespread in California but not fully established in the endangered area, or pest established in two contiguous suitable climate/host areas.
- High (-3) Pest has fully established in the endangered area, or pest is reported in more than two contiguous or non-contiguous suitable climate/host areas.

2) Final Score: Medium 11 (12-1=11)

Uncertainty: Since the species is relatively newly reported for California it is unclear how well adapted it will be to the climatic regimes of the state. The small seeds are hard coated, but it is unknown to what degree it is currently establishing a soil seed bank in California.

Conclusion and Rating Justification: *Lathyrus nissolia* has been recently documented as a naturalized species in environmentally sensitive moist meadow areas in northern California. Control and eradication of this population would mitigate the risk to native species. A “B”-rating is recommended.

References:

Agriculture Victoria. 2022. Grass vetchling. *Lathyrus nissolia*. [Grass vetchling \(Lathyrus nissolia\) | VRO | Agriculture Victoria](#) Accessed July 15, 2022.

Ball, P.W. 1968. *Lathyrus* L. Pp. 136-143 in Tutin, T.G. et al. (eds.) *Flora Europaea*, Volume 2. Cambridge University Press.

Calflora Database. 2022. Berkeley, California. Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. <https://www.calflora.org/> Accessed July 13, 2022

California Department of Food and Agriculture (CDFA), Plant Pest Diagnostics Branch, Pest and Damage Record (PDR) Database. Accessed July 13, 2022.

Consortium of California Herbaria (CCH). 2022. <https://ucjeps.berkeley.edu/consortium/> Accessed July 13, 2022

Giblin, D. E. et al., eds. (2018). *Lathyrus* L. Pp. 164-167 in *Flora of the Pacific Northwest: An Illustrated Manual*. 2nd edition. University of Washington Press and Burke Museum, Seattle, Washington.

Gunn, C.R. 1970. Seeds of the tribe Viciae (Leguminosae) in North American agriculture. *Proceedings of the Association of Official Seed Analysts* 60: 48-70.

Kingsbury, J. M. 1964. *Poisonous Plants of the United States and Canada*. Prentice-Hall, Inc., Englewood Cliffs, N.J.

Online Atlas of the British and Irish Flora. 2022. [Lathyrus nissolia | Online Atlas of the British and Irish Flora \(brc.ac.uk\)](#) Accessed July 14, 2022

Plants of the World Online. 2022. [Lathyrus nissolia L. | Plants of the World Online | Kew Science](#) Accessed July 15, 2022

United States Department of Agriculture (USDA), Agricultural Marketing Service (AMS). 2022. State Noxious-Weed Seed Requirements Recognized in the Administration of the Federal Seed Act. <https://www.ams.usda.gov/sites/default/files/media/StateNoxiousWeedsSeedList.pdf> Accessed July 13, 2022.

United States Department of Agriculture (USDA), National Resource Conservation Service (NRCS). 2021. Plants Database. Accessed July 14, 2022: [USDA Plants Database](#)

United States Department of Agriculture (USDA), Agricultural Research Service, National Plant Germplasm System. 2021. Germplasm Resources Information Network (GRIN-Taxonomy). <https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomydetail?id=21593> Accessed July 13, 2022

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***Comment Period: 09/13/2022 through 10/28/2022**

***NOTE:**

You must be registered and logged in to post a comment. If you have registered and have not received the registration confirmation, please contact us at [permits\[@\]cdfa.ca.gov](mailto:permits[@]cdfa.ca.gov).

Comment Format:

- ❖ Comments should refer to the appropriate California Pest Rating Proposal Form subsection(s) being commented on, as shown below.

Example Comment:

Consequences of Introduction: 1. Climate/Host Interaction: [Your comment that relates to "Climate/Host Interaction" here.]

- ❖ Posted comments will not be able to be viewed immediately.
 - ❖ Comments may not be posted if they:
 - Contain inappropriate language which is not germane to the pest rating proposal;
 - Contains defamatory, false, inaccurate, abusive, obscene, pornographic, sexually oriented, threatening, racially offensive, discriminatory or illegal material;
-

Violates agency regulations prohibiting sexual harassment or other forms of discrimination;

Violates agency regulations prohibiting workplace violence, including threats.

- ❖ Comments may be edited prior to posting to ensure they are entirely germane.
- ❖ Posted comments shall be those which have been approved in content and posted to the website to be viewed, not just submitted.

Proposed Pest Rating: [B]
