Plant Risk Evaluator -- PRE™
Evaluation Report

Lathyrus latifolius -- California

PlantRight

PRE Score: 16 -- High Potential Risk
Confidence: 70 / 100
Questions answered: 20 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Submitted

Evaluation Date: February 10, 2020

This PDF was created on April 07, 2025

This project was funded in part by the USDA National Institute of Food and Agriculture through the Western Integrated Pest Management Center, grant number 2018-70006-28881.

Plant Evaluated

Lathyrus latifolius

Image by Ron Vanderhoff

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Lathyrus latifolius*) in an effort to understand the invasive history, reproductive strategies, and the impact, if any, on the region's native plants and animals. This research reflects the data available at the time this evaluation was conducted.

Summary

This plant is a vining perennial with an extensive history in the horticultural industry. It has naturalized throughout the US, and also in Australia and beyond its native range (North Africa/Southern Europe) into Eastern and Northern Europe. The plant is noted as producing monocultures and invading natural areas. However it is heavily associated with disturbed sites and roadsides. It can reproduce by seed but its persistence onsite is due to its extensive production of rhizomes, making it very difficult to control once established.

General Information

Status: Submitted
Screener: Lynn Sweet
Evaluation Date: February 10, 2020

Plant Information

Plant: *Lathyrus latifolius*

Regional Information

Region Name: California

Climate Matching Map

To answer four of the PRE questions for a regional evaluation, a climate map with three climate data layers (Precipitation, UN EcoZones, and Plant Hardiness) is needed. These maps were built using a toolkit created in collaboration with GreenInfo Network, USDA, PlantRight, California Invasive Plant Council, and The Information Center for the Environment at UC Davis.

Evaluation Questions

These questions are based on an article published by PLOS One, which can be found here: https://doi.org/10.1371/journal.pone.0121053.

Invasive History and Climate Matching (Questions 1 - 6)

1. Has the species (or cultivar or variety, if applicable; applies to subsequent "species" questions) become naturalized where it is not native?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

The species has naturalized where it is not native in the eastern Mediterranean region (Cyprus), Northern and central Europe, Australia, and North America.

Reference(s):

- U.S. National Plant Germplasm Network (0). Taxonomy - GRIN-Global Web v 1.9.8.2.

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2. Is the species (or cultivar or variety) noted as being naturalized in the US or world in a similar climate?

- Answer: **Yes**, which contributes **2** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Yes. The species has naturalized in 43 counties in the region of interest, California, USA. (Calflora) As well, the species is naturalized in Oregon and Washington, which have a similar climate.

Reference(s):

- Calflora (0). Calflora: 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.

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3. Is the species (or cultivar or variety) noted as being invasive in the U.S. or world?

- Answer: **Yes**, which contributes **2** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

The plant is listed as being invasive in many areas of the US, primarily referencing roadsides and rights-of-way (Oregon Dept of Ag). Considered to be invasive in some areas in the US (Missouri Botanical Garden) The plant is an environmental weed in Victoria, Australia and on Lord Howe Island, it is listed as an invasive plant that is targeted for eradication. (Weeds of Australia) This was noted as late-season monoculture in the San Francisco area. (R. Kesel, Pers. Comm.)

Reference(s):

- Oregon Dept of Agriculture (0). Oregon Department of Agriculture "B" Rated Weeds: Perennial peavine.
- Missouri Botanical Garden (2014). Missouri Botanical Garden Plant Finder.
- Queensland Government (0). Lathyrus latifolius Fact Sheet from Environmental Weeds of Australia for Biosecurity Queensland Edition. .
- Kesel, R. (2019). Personal communication, Rachel Kesel, OneTam Conservation Mgmt Specialist.

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4. Is the species (or cultivar or variety) noted as being invasive in the US or world in a similar climate?

- Answer: **Yes**, which contributes **3** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Within the region of interest, this was noted as becoming a late-season monoculture in urban areas around San Francisco, and it has been managed in another disturbed preserve in San Francisco. It was also noted that it demonstrates an extremely extensive rhizome network. The plant occurs in the front country of Mt. Tamalpais, Dipsea area, and several highway corridors in Sonoma County (R. Kesel, Pers. Comm.) Within a similar climate, the plant is listed as being invasive in Oregon, primarily referencing roadsides and rights-of-way (Oregon Dept of Ag). Although it is noted that it is mainly a weed of disturbed sites and roadsides where it occurs in Australia, they do mention that it has invaded natural areas as well. The plant is listed as being invasive in Victoria, Australia, some of which matches the climate in California. (Weeds of Australia, Queensland)

Reference(s):

- Kesel, R. (2019). Personal communication, Rachel Kesel, OneTam Conservation Mgmt Specialist.
- Queensland Government (0). Lathyrus latifolius Fact Sheet from Environmental Weeds of Australia for Biosecurity Queensland Edition. .
- Oregon Dept of Agriculture (0). Oregon Department of Agriculture "B" Rated Weeds: Perennial peavine.

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5. Are other species of the same genus (or closely related genera) invasive in a similar climate?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Low** confidence in this answer based on the available literature.

Answer / Justification:

Lathyrus odoratus is noted to be invasive in New Zealand and possibly in the Dominican Republic (CABI). This species has naturalized in California but no information was available about it being invasive. No other Lathyrus are on the noxious weed list in the region of interest.

Reference(s):

- CABI (2007). CABI Invasive Species Compendium.

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6. Is the species (or cultivar or variety) found predominately in a climate matching the region of concern?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

The plant is found throughout vast areas of the United States, much of which does not match the region of concern. The areas where it is found in Central, Eastern and Northern Europe and Scandinavia do not match the region of concern. Of the areas reported in Australia and New Zealand, about half of the areas match the climate in the region of concern. (GBIF, Invasive Plants Atlas)

Reference(s):

- GBIF (2016). GBIF Backbone Taxonomy.
- Invasive Plant Atlas of the United States (0). Everlasting peavine: Lathyrus latifolia: Invasive Plant Atlas of the United States.

Impact on Native Plants and Animals (Questions 7 - 10)

7. Does this plant displace native plants and dominate (overtop or smother) the plant community in areas where it has established?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

In Oregon, USA, the plant is known to overtop and smother native vegetation.

Reference(s):

- Oregon Dept of Agriculture (0). Oregon Department of Agriculture "B" Rated Weeds: Perennial peavine.

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8. Is the plant noted as promoting fire and/or changing fire regimes?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

No effects noted having to do with fire. The plant is a low-growing tender perennial, so unlikely to contribute to fire risk substantially.

Reference(s):

- [Anonymous] .

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9. Is the plant a health risk to humans or animals/fish? Has the species been noted as impacting grazing systems?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Can be toxic to livestock. (DiTomaso et al) USDA GRIN lists it as a vertebrate poison for mammals.

Reference(s):

- DiTomaso, J. M., & Healy E. A. (2013). Weed control in natural areas in the Western United States. 544.
- U.S. National Plant Germplasm Network (0). Taxonomy - GRIN-Global Web v 1.9.8.2.

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10. Does the plant produce impenetrable thickets, blocking or slowing movement of animals, livestock, or humans?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

The plant grows tender foliage and flowers to 4-8" tall, so this is unlikely.

Reference(s):

- Missouri Botanical Garden (2014). Missouri Botanical Garden Plant Finder.

Reproductive Strategies (Questions 11 - 17)

11. Does this species (or cultivar or variety) reproduce and spread vegetatively?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Rhizomatous growth is a well-known method of reproduction for this species.

Reference(s):

- Missouri Botanical Garden (2014). Missouri Botanical Garden Plant Finder.

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12. If naturally detached fragments from this plant are capable of producing new plants, is this a common method of reproduction for the plant?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Low** confidence in this answer based on the available literature.

Answer / Justification:

Since this is a vining species, it is likely that animals moving through the underbrush could easily detach pieces of the vine and deposit them elsewhere, however, this was not noted in any reference.

Reference(s):

- Hossaert-McKey, M., & Jarry M. (1992). Spatial and Temporal Patterns of Investment in Growth and Sexual Reproduction in Two Stoloniferous Species, Lathyrus Latifolius and L. Sylvestris. Journal of Ecology. 80, 555–565.

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13. Does the species (or cultivar or variety) commonly produce viable seed?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

The plant is said to easily self-seed.

Reference(s):

- Missouri Botanical Garden (2014). Missouri Botanical Garden Plant Finder.

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14. Does this plant produce copious viable seeds each year (> 1000)?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

The primary means of reproduction appears to be vegetative. It was noted that seeds were rarely set in greenhouse settings, and seed set in the field is very dependent on pollinators and the abundance of nectar robbers (Godt & Hamrick 1992). The number of ramets in the field far exceeded the number of seedlings. (Hossaert-McKey and Jarry 1992) A study of ovule position in natural populations in Europe showed some variation, but note an average of 10-12 flowers per inflorescence, maturing 0.5-1.5 pods each, and an average of 5-6 viable seeds per pod. This source did not mention the number of infl. per individual, but the numbers would likely be less than 1000 seeds per individual. (Hossaert & Valero 1988)

Reference(s):

- Godt, M. Jo W., & Hamrick J. L. (1991). Estimates of outcrossing rates in Lathyrus latifolius populations. Genome. 34, 988–992.
- Hossaert-McKey, M., & Jarry M. (1992). Spatial and Temporal Patterns of Investment in Growth and Sexual Reproduction in Two Stoloniferous Species, Lathyrus Latifolius and L. Sylvestris. Journal of Ecology. 80, 555–565.
- Hossaert, M., & Valéro M. (1988). Effect of ovule position in the pod on patterns of seed formation in two species of lathyrus (leguminosae: papilionoideae). American Journal of Botany. 75, 1714–1731.

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15. Is there significant germination (>25%) of seeds the next growing season, with no requirement of an infrequent environmental condition for seeds to germinate (i.e. fire) or long dormancy period?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

There was no mention of specific requirements for germination. Germination rates were listed as high under various conditions listed in Kew Seed Information Database.

Reference(s):

- Kew Botanic Garden (0). Kew Seed Information Database.

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16. Does this plant produce viable seed within the first three years (for an herbaceous species) to five years (for a woody species) after germination?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

The species didn't flower the first year under controlled conditions in a study that also showed high mortality, so this is probably not typical (Hossaert-McKey & Jarry 1992). The plant is listed in garden blogs/web sales as flowering during the first year, and also unlikely to flower in the first year. None indicated that it would take longer than 3 years for the plant to flower.

Reference(s):

- Hossaert-McKey, M., & Jarry M. (1992). Spatial and Temporal Patterns of Investment in Growth and Sexual Reproduction in Two Stoloniferous Species, Lathyrus Latifolius and L. Sylvestris. Journal of Ecology. 80, 555–565.
- [Anonymous] (0). Perennial Pea Lathyrus latifolius. Karen Goat Keeper.
- Roger Parsons (0). Roger Parson's Sweet Peas.

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17. Does this plant continuously produce seed for >3 months each year or does seed production occur more than once a year?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Calflora lists the bloom period as May-September (5 months). Other garden sites list the species as blooming "all summer." "The first flowers of both species appear in late June and early July, and the last pods mature in October. Each of the pink flowers ...stays open during about one week. Fertilized fruits require about one month for maturation." (Hossaert & Valero 1988)

Reference(s):

- Calflora (0). Calflora: 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.
- Hossaert, M., & Valéro M. (1988). Effect of ovule position in the pod on patterns of seed formation in two species of lathyrus (leguminosae: papilionoideae). American Journal of Botany. 75, 1714–1731.

Dispersal (Questions 18 - 20)

18. Are the plant's propagules frequently dispersed long distance (>100 m) by mammals or birds or via domestic animals?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Low** confidence in this answer based on the available literature.

Answer / Justification:

Being fairly toxic to wildlife and with the evolution of a violent dehiscion and vegetative reproduction as dispersal, it's unlikely.

Reference(s):

- Burnham, R. J. (2013). Censusing Lianas In Mesic Biomes of Eastern RegionS: Lathyrus latifolius. Censusing Lianas In Mesic Biomes of Eastern RegionS: A project of Robyn J. Burnham, University of Michigan. 2020,

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19. Are the plant's propagules frequently dispersed long distance (>100 m) by wind or water?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

The large, heavy seeds are noted to be primarily gravity dispersed. (Godt and Hamrick 1991)

Reference(s):

- Godt, M. Jo W., & Hamrick J. L. (1991). Estimates of outcrossing rates in Lathyrus latifolius populations. Genome. 34, 988–992.

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20. Are the plant's propagules frequently dispersed via contaminated seed (agriculture or wildflower packets), equipment, vehicles, boats or clothing/shoes?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

This is noted to be a roadside weed in Oregon, however, there is no specific mechanism of attachment to vehicles, and it is not noted to be an ag contaminant. Dehiscing violently and gravity seem to be the primary way the seeds disperse.

Reference(s):

- Burnham, R. J. (2013). Censusing Lianas In Mesic Biomes of Eastern RegionS: Lathyrus latifolius. Censusing Lianas In Mesic Biomes of Eastern RegionS: A project of Robyn J. Burnham, University of Michigan. 2020,

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Total PRE Score

PRE Score: 16 -- High Potential Risk
Confidence: 70 / 100
Questions answered: 20 of 20 -- Valid (80% or more questions answered)

PRE Score Legend

The PRE Score is calculated by adding the point totals for each (answered) question.
< 13 : Low Potential Risk
13 - 15 : Moderate Potential Risk
> 15 : High Potential Risk

Questions Answered Legend

It is important to answer at least 16 questions to consider a PRE Score as "valid".
>= 16 : valid (80% or more questions answered)
<= 15 : invalid (not enough questions answered)

Organization Ownership and Content Privacy

Organization: PlantRight
Content Privacy: Public

Evaluation Reviewers

The PRE approach is to base decisions on science and make decisions by consensus of diverse horticultural stakeholders. The literature review and process of answering PRE's questions are based on science; the decisions of which plants to prioritize are based on consensus. To ensure this process is in place and that PRE is collaborative, volunteer stakeholders are recruited from each region to review evaluations. The following experts in their profession (plant science, conservation, or horticultural trade) have participated as volunteer PRE reviewers for this evaluation:

This evaluation does not have any reviewers.

Evaluation Issues

The following section lists all public issues for this evaluation. Issues provide a way for stakeholder reviewers to communicate any concerns or suggestions they might have with the plant or evaluation. Please email info@plantright.org if additional action is required to resolve open issues.

There are currently no issues associated with this evaluation.

About PRE and this Plant Evaluation Report

The Plant Risk Evaluator (PRE) is an online database and platform designed to assess the risk of a plant becoming invasive in a given region.This tool offers many benefits, and we encourage you to visit the PRE website (https://pretool.org) for more information.

If you would like to learn more about PRE, please email us at info@plantright.org, requesting a PRE Account.

PRE beta funding was provided by Sustainable Conservation (https://www.suscon.org/) and a USDA Farm Bill grant. Additional funding has been provided by the Western Integrated Pest Management Center.