

Assessment date 20 Feb 2015

<i>Macroptilium lathyroides</i> (<i>Macroptilium lathyroides</i> var. <i>lathyroides</i>, <i>Macroptilium lathyroides</i> var. <i>semierectum</i>, <i>Phaseolus lathyroides</i> L. (<i>basionym</i>), <i>Phaseolus semierectus</i> L. <i>Phaseolus semierectus</i> var. <i>angustifolius</i> Benth)-PHASEY BEAN		Answer	Score
1.01	Is the species highly domesticated?	n	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to FL climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	y	1
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	y	2
3.02	Garden/amenity/disturbance weed	y	2
3.03	Weed of agriculture	y	4
3.04	Environmental weed	y	4
3.05	Congeneric weed	y	2
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	n	0
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	n	-1
4.05	Toxic to animals	n	0
4.06	Host for recognised pests and pathogens	y	1
4.07	Causes allergies or is otherwise toxic to humans	n	0
4.08	Creates a fire hazard in natural ecosystems	n	0
4.09	Is a shade tolerant plant at some stage of its life cycle	n	0
4.10	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils). North & Central Zones: infertile soils; South Zone: shallow limerock or Histisols.	y	1
4.11	Climbing or smothering growth habit	y	1
4.12	Forms dense thickets	n	0
5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	n	0
6.01	Evidence of substantial reproductive failure in native habitat	n	0
6.02	Produces viable seed	y	1
6.03	Hybridizes naturally		
6.04	Self-compatible or apomictic	y	1
6.05	Requires specialist pollinators	n	0

6.06	Reproduction by vegetative propagation	n	-1
6.07	Minimum generative time (years)	1	1
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant		
7.04	Propagules adapted to wind dispersal	y	1
7.05	Propagules water dispersed		
7.06	Propagules bird dispersed		
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	n	-1
8.01	Prolific seed production	y	1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	n	-1
8.03	Well controlled by herbicides	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation	y	1
8.05	Effective natural enemies present in U.S.		
Total Score		19	
Implemented Pacific Second Screening		n/a	
Risk Assessment Results		High	

section	# questions answered	satisfy minimum?
A		11 yes
B		12 yes
C		17 yes
total		40 yes

	Reference	Source data
1.01		No evidence of selection for reduced weediness.
1.02		
1.03		
2.01	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnnd.tif). 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (2-18-2015).	No computer analysis was performed. 1. Global hardiness zone: 8, 9, 10, 11, 12, 13; equivalent to USDA Hardiness zones: USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15°F) USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11a: to USDA Zone (40 °F) USDA Zone 11b: to (45 °F) USDA Zone 12a: to (50 °F) USDA Zone 12b: to (55 °F). 2. Native to NORTHERN AMERICA Mexico, SOUTHERN AMERICA Caribbean: Antigua and Barbuda - Antigua; Bahamas; Barbados; Cayman Islands; Cuba; Dominica; Grenada; Guadeloupe; Jamaica; Martinique; Puerto Rico; St. Kitts and Nevis - St. Kitts; St. Lucia; St. Vincent and Grenadines Mesoamerica: Belize; Costa Rica; Guatemala; Nicaragua; Panama, Northern South America: French Guiana; Guyana; Suriname; Venezuela, Western South America: Bolivia; Colombia; Ecuador; Peru, Southern South America: Argentina; Paraguay
2.02		See source data 2.01
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf).	1. Distribution in the native/cultivated range occurs in Cfb, Cfa, Csb, Cwa, Bsk, Aw, Am, Af, Bsh, Bwh, Bsk
2.04	Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Macroptilium_lathyroides.htm (2-13-2015)	1. Found in areas with rainfall from (400-) 750-2,000 (-3,500) mm [(16in-) 29.5-78in (-138in)]
2.05	1. Hawaiian Plants and Tropical Flowers: A Guide to the Flowers and Plants of Hawaii http://wildlifeofhawaii.com/flowers/716/macoptilium-lathyroides-wild-bushbean/ (2-13-2015) 2. Flora of Pakistan http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=220008012 (2-13-2015) 3. Cook Islands Biodiversity and Natural Heritage http://cookislands.bishopmuseum.org/species.asp?id=6359 (2-13-2015)	1. Hawaii Native Status: Introduced. This naturalized cattle forage plant is native to Central America, South America, and the West Indies. 2. Introduced in Pakistan. 3. COOK ISLANDS STATUS: Introduced - Recent, Naturalised; Land, lowlands
3.01	1. Smithsonian National Museum of Natural History http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/result2.cfm?genus=Macroptilium&species=lathyroides&rank1=&epit het1= (2-13-2015) 2. Aplaca. J. 2012. Non-native species new to Texas with comments on other species. Phytoneuron 2012-95: 1-6. Published 16 October 2012. ISSN 2153 733X 3. Rumbaugh, M.D. 1990. Special purpose forage legumes. p. 183-190. In: J. Janick and J.E. Simon (eds.), Advances in new crops. Timber Press, Portland, OR.	1. Status: Naturalized in Hawaii 2. This species is native to tropical America and is naturalized in Florida, Georgia, Louisiana, and South Carolina 3. Phasey bean (Macroptilium lathyroides), like aeschyromene, is wild or naturalized throughout the Caribbean
3.02	1. Brisbane City Council Weed Identification Tool http://weeds.brisbane.qld.gov.au/weeds/phasey-bean (2-18-2015) 2. The University of Queensland. Special edition of Environmental Weeds of Australia for Biosecurity Queensland. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/Html/Macroptilium_lathyroides.htm (2-16-2015)	1. A weed of disturbed sites, waste areas, roadsides, crops and gardens.) 2. A weed of disturbed sites, waste areas, roadsides, crops and gardens. 2. This species was introduced and planted as a pasture legume, but it has escaped cultivation and is now a weed of roadsides, disturbed sites, waste areas, gardens, pastures, crops and natural vegetation (i.e. riverbanks, riparian areas, grasslands and open woodlands).

3.03	<p>1. COTTON CATCHMENT COMMUNITIES Cooperative Research Centre (Established and supported under the Australian Government Cooperative Research Centres Programme) (http://www.cottoncrc.org.au/industry/Publications/Weeds/Weed_IdentificationTools/Weeds_by_common_names/Phasey_bean (2-16-2015) 2. C. Ham and R. Eastick, Department of Primary Industry, Fisheries and Mines of Northern Territory Government (Australia), Agnote No: C10 February 2004, http://www.nt.gov.au/d/Content/File/p/Crop/180.pdf (2-16-2015) 3. The University of Queensland. Special edition of Environmental Weeds of Australia for Biosecurity Queensland. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/Html/Macroptilium_lathyroides.htm (2-16-2015) 4. Global Compendium of Weeds http://www.hear.org/gcw/species/macroptilium_lathyroides/ (2-16-2015)</p>	<p>1. A major weed of cotton in Central Queensland. Very dense populations of phasey bean can establish and compete strongly with cotton. 2. Listed as a common weed of peanuts in Australia. 3. This species was introduced and planted as a pasture legume, but it has escaped cultivation and is now a weed of roadsides, disturbed sites, waste areas, gardens, pastures, crops and natural vegetation (i.e. riverbanks, riparian areas, grasslands and open woodlands). 4. Status listed as an agricultural weed and environmental weed.</p>
3.04	<p>1. The University of Queensland. Special edition of Environmental Weeds of Australia for Biosecurity Queensland. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/Html/Macroptilium_lathyroides.htm (2-16-2015) 2. Global Compendium of Weeds http://www.hear.org/gcw/species/macroptilium_lathyroides/ (2-16-2015)</p>	<p>1. Phasey bean (<i>Macroptilium lathyroides</i>) is regarded as an environmental weed in Queensland and the Northern Territory. 2. Status listed as an agricultural weed and environmental weed.</p>
3.05	<p>1. The University of Queensland. Special edition of Environmental Weeds of Australia for Biosecurity Queensland. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/Html/Macroptilium_atropurpureum.htm (2-16-2015) 2. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Macroptilium_atropurpureum.htm (2-16-2015)</p>	<p>1. Siratro (<i>Macroptilium atropurpureum</i>) is regarded as an environmental weed in Queensland, the Northern Territory, northern Western Australia and northern New South Wales. It is listed as a priority environmental weed in at least one Natural Resource Management region and is actively managed by community groups in the Northern Territory. This species can form dense infestations along forest margins, and will grow over native shrubs, grasses and young trees, effectively smothering them. 2. It is now considered a weed of ungrazed areas (e.g. roadsides, waste land, domestic gardens) and can also create problems in sugar cane where the tough climbing stems can interfere with mechanical harvesting.</p>
4.01	<p>Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1999. Manual of the Flowering Plants of Hawai'i (Revised ed., vols 1 & 2). University of Hawaii Press & Bishop Museum Press, Hawaii, U.S.A. 682-683 pp.</p>	<p>These features are not in the species description.</p>
4.02		<p>no evidence</p>
4.03		<p>Family: Fabaceae</p>
4.04	<p>1. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Macroptilium_lathyroides.htm (2-13-2015) 2. Heuzé V., Tran G., Bastianelli D., Giger-Reverdin S., Lebas F., 2012. Phasey bean (<i>Macroptilium lathyroides</i>). Feedipedia.org. A programme by INRA, CIRAD, AFZ and FAO. http://www.feedipedia.org/node/627 Last updated on October 11, 2012, 13:24 (2-16-2015)</p>	<p>1. Mainly used as a pioneer forage, but can also be conserved as hay or as silage when mixed with a grass. 2. Phasey bean is mainly used as a pioneer forage that rapidly provides feed in pasture. 2b. Phasey bean can grow in association with summer grasses to provide early summer grazing.</p>

4.05	1. Heuzé V., Tran G., Bastianelli D., Giger-Reverdin S., Lebas F., 2012. Phasey bean (<i>Macroptilium lathyroides</i>). Feedipedia.org. A programme by INRA, CIRAD, AFZ and FAO. http://www.feedipedia.org/node/627 Last updated on October 11, 2012, 13:24 (2-16-2015) 2. Grassland Index http://www.fao.org/ag/agp/AGPC/doc/Gbase/data/pf000050.htm (2-16-2015)	1. No evidence of toxicity has been found in cattle or in horses 2. It had been reported as poisonous to horses, but Paltridge (1955) found no toxicity with horses at Lawes and chaffed green material had no effect on dairy cows when fed for ten successive days. It did not produce any milk taint
4.06	1. Bracero Acosta, V., L.I. Rivera and J.S. Beaver. 2003. DNA analysis confirms <i>Macroptilium lathyroides</i> as alternate host of Bean golden yellow mosaic virus. Plant Dis. Plant Dis. 87:1022-1025 2. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Macroptilium_lathyroides.htm (2-13-2015)	1. These results confirmed that <i>M. lathyroides</i> could serve as an alternative host of BGYMV and that an infectivity cycle of BGYMV could possibly occur between <i>P. vulgaris</i> and <i>M. lathyroides</i> in Puerto Rico. 2. Late-sown seedlings in particular are severely attacked by bean fly (<i>Ophiomyia</i> (<i>Melanagromyza</i>) <i>phaseoli</i> , Diptera: Agromyzidae). Adults of rough brown weevil (<i>Baryopadus corrugatus</i> , Coleoptera: Curculionidae) feed on the foliage, while larvae can severely damage roots. <i>M. lathyroides</i> is an alternative host for silverleaf whitefly (<i>Bemisia argentifolii</i> , Homoptera: Aleyrodidae), a serious pest of a number of crop plants. Nematodes attack the roots in lighter textured soils, the main species being <i>Meloidogyne incognita</i> and <i>M. javanica</i> . It shows field resistance to little-leaf phytoplasma, but is infected by a multitude of viruses, few of which are of any consequence in the field.
4.07		no evidence
4.08		no evidence
4.09	1. Charles Darwin Foundation http://www.darwinfoundation.org/datazone/collections/20846/ (2-18-2015) 2. Dave's Garden http://davesgarden.com/guides/pf/go/62217/#b (2-18-2015) 3. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Macroptilium_lathyroides.htm (2-13-2015)	1. Small vine growing in full sun 2. Sun Exposure: Sun to Partial Shade 3. Tolerant of light to moderate shade, although seedlings may suffer from shading. Its twining ability, once mature, enables it to compete for light with tall grasses.
4.10	1. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Macroptilium_lathyroides.htm (2-13-2015) 2. USDA Global Soil Regions Map http://www.nrcs.usda.gov/Internet/FSE_MEDIA/nrcs142p2_050722.jpg (2-18-2015) 3. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (2-18-2015). 4. B. K. Trivedi (October 2002) GRASSES AND LEGUMES FOR TROPICAL PASTURES. Indian Grassland and Fodder Research Institute, Jhansi - 284 003, India	1. Adapted to a wide range of well to poorly drained soils, from deep sands to heavy clays, and with pH from (5.0-) 6.0-7.0 (-8.0) 2. & 3. Soil type in native range is congruent with soil types in Florida. 4. Generally it grows well on fertile soils (deep sandy to heavy clays) but also tolerate infertile, acid to saline and alkaline soils with even poor drainage.
4.11	1. ENVIS Centre on Floral Diversity http://bsienvis.nic.in/Database/Invasive_Alien_species_15896.aspx (2-16-2015) 2. Leon Levy native Plant Preserve http://www.levypreserve.org/Plant-Listings/Macroptilium-lathyroides 3. Center for Aquatic and Invasive Plants, University of Florida IFAS http://plants.ifas.ufl.edu/node/260 (2-18-2015)	1. Climber 2. <i>Macroptilium lathyroides</i> is an annual that grows prostrate or climbing over other vegetation 3. Plants form dense monocultures and grow erect to a height of approximately 0.5 meters.
4.12		no evidence
5.01		Family: Fabaceae
5.02		Family: Fabaceae

5.03	Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1999. Manual of the Flowering Plants of Hawai'i (Revised ed., vols 1 & 2). University of Hawaii Press & Bishop Museum Press, Hawaii, U.S.A. 682-683 pp.	It is a known nitrogen fixer, but is a not a woody plant.
5.04	Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1999. Manual of the Flowering Plants of Hawai'i (Revised ed., vols 1 & 2). University of Hawaii Press & Bishop Museum Press, Hawaii, U.S.A. 682-683 pp.	These features are not in the species description.
6.01		no evidence
6.02	1. Bhagirath S. Chauhan and Ma Jenina De Leon (2014) Seed Germination, Seedling Emergence, and Response to Herbicides of Wild Bushbean (<i>Macroptilium lathyroides</i>). Weed Science: October-December 2014, Vol. 62, No. 4, pp. 563-570. 2. PlantNet http://publish.plantnet-project.org/project/riceweeds_en/collection/collection/information/details/PHSLY(2-16-2016)	1. A tetrazolium test found 100% viability of the wild bushbean seeds. 2. Reproduction by seeds.
6.03		no evidence
6.04	1. Isolation requirements for some tropical legumes http://cropgenebank.sgrp.cgiar.org/files/isolation_information_legumes.pdf (2-13-2015) 2. 1. Tropical Forages http://www.tropicalforages.info/key/Forages/Media/Html/Macroptilium_lathyroides.htm (2-13-2015) 2. USDA Global Soil Regions Map http://www.nrcs.usda.gov/Internet/FSE_MEDIA/nrcs142p2_050722.jpg (2-18-2015) 3. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (2-18-2015).	1. Selfing. 2. Closely self-pollinated; 2n = 22.
6.05		no evidence
6.06		no evidence
6.07	1. B. K. Trivedi (October 2002) GRASSES AND LEGUMES FOR TROPICAL PASTURES. Indian Grassland and Fodder Research Institute, Jhansi - 284 003, India 2. Bhagirath S. Chauhan and Ma Jenina De Leon (2014) Seed Germination, Seedling Emergence, and Response to Herbicides of Wild Bushbean (<i>Macroptilium lathyroides</i>). Weed Science: October-December 2014, Vol. 62, No. 4, pp. 563-570.	1. Phasey bean is an erect annual or biennial legume and attains a height of 0.6 to 0.9 m 2. In Guyana, it was identified as one of the most important alien weeds, mainly because it can produce up to two generations in one season, produce a continuous supply of seeds throughout the season, and stay relatively unaffected by predation and drought.
7.01	1. Hawaiian Plants and Tropical Flowers: A Guide to the Flowers and Plants of Hawaii http://wildlifeofhawaii.com/flowers/716/macroptilium-lathyroides-wild-bushbean/ (2-13-2015) 2. The University of Queensland. Special edition of Environmental Weeds of Australia for Biosecurity Queensland. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/Html/Macroptilium_lathyroides.htm (2-16-2015)	Likely, but no definitive evidence 1. Wild Bushbean grows along roadsides, in pastures, and in other sunny, open, disturbed areas. 2. This species was introduced and planted as a pasture legume, but it has escaped cultivation and is now a weed of roadsides, disturbed sites, waste areas, gardens, pastures, crops and natural vegetation (i.e. riverbanks, riparian areas, grasslands and open woodlands).
7.02	1. Heuzé V., Tran G., Bastianelli D., Giger-Reverdin S., Lebas F., 2012. Phasey bean (<i>Macroptilium lathyroides</i>). Feedipedia.org. A programme by INRA, CIRAD, AFZ and FAO. http://www.feedipedia.org/node/627 Last updated on October 11, 2012, 13:24 (2-16-2015) 2. Charles Darwin Foundation http://www.darwinfoundation.org/datazone/checklists/545/ (2-18-2015)	1. Phasey bean is mainly used as a pioneer forage that rapidly provides feed in pastures. It can also be cut for hay or silage though it may drop its leaves during drying and handling. As a N-fixing legume, phasey bean is used for green manure and is a valuable cover crop in rotations 2. Taxon introduced for agricultural or domestic use; naturalized in the wild.

7.03		Referenced in GRIN as a potential seed contaminant, however there is a lack of supporting evidence.
7.04	1. Center for Aquatic and Invasive Plants, University of Florida IFAS http://plants.ifas.ufl.edu/node/260 (2-18-2015) 2. india Biodiversity Portal http://indiabiodiversity.org/observation/show/352187 (2-20-2015)	1. Fruits develop as paired long pods that split open when mature; they contain numerous wind-dispersed seeds. 2. Seeds wind dispersed.
7.05		no evidence
7.06		no evidence
7.07	Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1999. Manual of the Flowering Plants of Hawai'i (Revised ed., vols 1 & 2). University of Hawaii Press & Bishop Museum Press, Hawaii, U.S.A. 682-683 pp.	Seed description does not indicate a mechanism for attachment.
7.08		no evidence
8.01	1. B. K. Trivedi (October 2002) GRASSES AND LEGUMES FOR TROPICAL PASTURES. Indian Grassland and Fodder Research Institute, Jhansi - 284 003, India	1. Seed count 1,19,000/kg. The seed rate is 2.2 to 3.3 kg per ha. (Conversion to square meters)=62,700 seeds per ha
8.02		no evidence
8.03	Bhagirath S. Chauhan and Ma Jenina De Leon (2014) Seed Germination, Seedling Emergence, and Response to Herbicides of Wild Bushbean (<i>Macroptilium lathyroides</i>). Weed Science: October-December 2014, Vol. 62, No. 4, pp. 563-570.	The herbicide bentazon provided 100% control of wild bushbean when applied at the three- to five-leaf stages. However, to achieve 100% control by 2,4-D and metsulfuron-methyl + chlorimuron-ethyl, herbicides had to be applied at the three-leaf stage.
8.04		Lack of evidence
8.05		no evidence