

Assessment date 11 January August 2016

<i>Antigonon leptopus</i> All Zones		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 Florida's USDA climate zones (0-low; 1-intermediate; 2-high) North Zone: suited to Zones 8, 9 Central Zone: suited to Zones 9, 10 South Zone: suited to Zone 10	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 habitats with periodic inundation North Zone: mean annual precipitation 50-70 inches Central Zone: mean annual precipitation 40-60 inches South Zone: mean annual precipitation 40-60 inches	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	unk	
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	unk	0
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	?	
4.05	Toxic to animals	n	0
4.06	Host for recognised pests and pathogens	n	0
4.07	Causes allergies or is otherwise toxic to humans	n	0
4.08	Creates a fire hazard in natural ecosystems	y	1
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	unk	0
5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	unk	0
5.04	Geophyte	y	1
6.01	Evidence of substantial reproductive failure in native habitat	n	0
6.02	Produces viable seed	y	1

6.03	Hybridizes naturally	unk	-1
6.04	Self-compatible or apomictic	unk	-1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	y	1
6.07	Minimum generative time (years)	unk	-1
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	unk	-1
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	unk	-1
7.04	Propagules adapted to wind dispersal	unk	-1
7.05	Propagules water dispersed	y	1
7.06	Propagules bird dispersed	y	1
7.07	Propagules dispersed by other animals (externally)	unk	-1
7.08	Propagules dispersed by other animals (internally)	y	1
8.01	Prolific seed production	y	1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	y	1
8.03	Well controlled by herbicides	unk	1
8.04	Tolerates, or benefits from, mutilation or cultivation	y	1
8.05		?	
Total Score			21
Implemented Pacific Second Screening			n/a
Risk Assessment Results			High

section	# questions answered	satisfy minimum?
A		10 yes
B		9 yes
C		14 yes
total		33 yes

	Reference	Source data
1.01		Cultivated but no evidence of selection for reduced weediness
1.02		Skip to question 2.01
1.03		Skip to question 2.01
2.01	1. PERAL NAPPFAST Global Plant Hardiness. http://www.nappfast.org/Plant_hardiness/2012/PHZ%20update201230%20yr%20%20300dpi.tif (Accessed: 5 January 2016) 2. USDA National Plant Germplasm System. https://npgsweb.ars-grin.gov/gringlobal/taxonomydetail.aspx?3650 (Accessed: 5 January 2016) 3. Global Biodiversity Information Facility. http://www.gbif.org/species/2889355 (Accessed: 5 January 2016)	No computer analysis was performed. 1. Florida North Zone: Hardiness zones 8 and 9. Central Zone: Hardiness zones 9 and 10. South Zone: Hardiness zone 10. Present in zones 8, 9, 10, 11, and 12. 2. Native to Mexico and Guatemala. 3. See distribution map.
2.02		Native range well known.
2.03	1. The University of Melbourne. Köppen-Geiger Climate Map of the World. http://people.eng.unimelb.edu.au/mpeel/koppen.html (5 January 2016) 2. USDA National Plant Germplasm System. https://npgsweb.ars-grin.gov/gringlobal/taxonomydetail.aspx?3650 (Accessed: 5 January 2016) 3. Global Biodiversity Information Facility. http://www.gbif.org/species/2889355 (Accessed: 5 January 2016)	1. Present in Köppen-Geiger Climate Zones Af, Am, Aw, BWh, BWk, BSh, BSk, Cwa, Cwb, Cfa, and Cfb. 2. Native to Mexico and Guatemala. 3. See distribution map.
2.04	1. Climate Charts. World Climate Maps. http://www.climate-charts.com/World-Climate-Maps.html#rain (Accessed: 5 January 2016) 2. USDA National Plant Germplasm System. https://npgsweb.ars-grin.gov/gringlobal/taxonomydetail.aspx?3650 (Accessed: 5 January 2016) 3. Global Biodiversity Information Facility. http://www.gbif.org/species/2889355 (Accessed: 5 January 2016)	1. Present in areas with rainfall in these ranges. 2. Native to Mexico and Guatemala. 3. See distribution map.
2.05	1. Wagner, W. L., D. R. Herbst & S. H. Sohmer. 1990. Manual of flowering plants of Hawaii. University of Hawaii at Press. Honolulu. 2. Cronk, Q. C. B. & J. L. Fuller. 1995. Plant invaders. Chapman and Hall. London. 3. Swarbrick, J. T. & R. Hart. 2001. Environmental weeds of Christmas island (Indian Ocean) and their management. Plant protection quarterly. V16 (2): 54-57. 4. Oommachan M. 1977. The flora of Bhopal. J. K. Jain brothers. Bhopal. India. 5. Merrill, E. D. 1925. An enumeration of Philippine flowering plants. Vol 1. Manila bureau of printing. 6. USDA Plants Database. http://plants.usda.gov/core/profile?symbol=Anle4 (Accessed: 5 January 2016)	1-5. Has been introduced to Hawaii, Guam, Christmas islands, India, Philippines 6. Introduced to Texas, Louisiana, Mississippi, Alabama, Georgia, Florida, and South Carolina.
3.01	1. Wagner, W. L., D. R. Herbst & S. H. Sohmer. 1990. Manual of flowering plants of Hawaii. University of Hawaii at Press. Honolulu. 2. Swarbrick J. T. and Hart R. 2000. ;Environmental weeds of Christmas Island (Indian Ocean) and their management. Plant Protection Quarterly vol 16(2):54-57 3. BioOne. http://www.bioone.org/doi/pdf/10.1614/IPSM-D-10-00088.1 (Accessed: 5 January 2016)	1. It is native to Mexico and is naturalized in (1) Hawaii and the (2) Christmas Island. 3. "it has been documented as naturalized in Alabama, Florida, Georgia, Hawaii, Louisiana, and Texas", "This plant clearly has been introduced as an ornamental and now is becoming naturalized around the tropics, and needs to be controlled."
3.02	1. Queensland Government. Weeds of Australia. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 5 January 2016) 2. Global Compendium of Weeds. http://www.hear.org/gcw/species/antigonon_leptopus/ (Accessed: 5 January 2016)	1. "A weed of waterways and riparian areas, monsoon vine thickets, rainforest margins, coastal sand dunes, mangrove vegetation, roadsides, disturbed sites, waste areas and old gardens in the wetter tropical and sub-tropical regions of Australia." 2. Listed as a garden thug and weed

3.03	1. Aluri, R. S. J., V. R. Kanaka, P. Victor & A. Naidu. 2001. Floral ecology, breeding system and pollination in <i>Antigonon leptopus</i> L. (Polygonaceae). Plant species biology. Vol 16: 159-164. 2. Global Compendium of Weeds. http://www.hear.org/gcw/species/antigonon_leptopus/ (Accessed: 5 January 2016)	1. 'It is considered to be a serious pest for many cultivated plants in anthropogenic habitats in India.' 2. Listed as an agricultural weed
3.04	1. Swarbrick J. T. and Hart R. 2000. ;Environmental weeds of Christmas Island (Indian Ocean) and their management. Plant Protection Quarterly vol 16(2):54-57 3) http://www.fleppc.org/99list.htm 2. Global Compendium of Weeds. http://www.hear.org/gcw/species/antigonon_leptopus/ (Accessed: 5 January 2016)	1. It is considered a minor environmental weed on Christmas Island. '...rampant on sea and inland cliffs and in previously mined areas ...where it may be hampering the annual migration of crabs and interfering with natural regeneration.' 3)Category II environmental weed Florida 2. Listed as an environmental weed
3.05		No evidence
4.01	1. Wagner, W. L., D. R. Herbst & S. H. Sohmer. 1990. Manual of flowering plants of Hawaii. University of Hawaii at Press. Honolulu. 2. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 8 January 2016) 3. Global Biodiversity Information Facility. http://www.gbif.org/species/2889355 (Accessed: 8 January 2016)	1. Does not produce spines, thorns or burrs. 2&3. No evidence of these features present in the description of the plant.
4.02		No evidence
4.03		No evidence
4.04	1. Madrone Nursery. http://home.earthlink.net/~madronenursery/Vines/coralvine.html (Accessed: 8 January 2016) 2. http://www.hear.org/pier/anlep.htm 3. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 8 January 2016) 4. Queensland Government. Weeds of Australia. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. Deer resistant. 2. 'Fruits and seeds are eaten and spread by domestic and wild animals (birds, pigs).' 3. "Fruits and seeds are eaten and spread by wildlife such as birds, raccoons, and pigs." 4. "spread to new locations by domestic and wild animals (e.g. birds and wild pigs) that eat the fruit" However, there is no evidence that animals would remove significant aboveground biomass.
4.05	1. http://www.hear.org/pier/anlep.htm 2. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 8 January 2016) 3. Queensland Government. Weeds of Australia. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. 'Fruits and seeds are eaten and spread by domestic and wild animals (birds, pigs).' 2. "Fruits and seeds are eaten and spread by wildlife such as birds, raccoons, and pigs." 3. "spread to new locations by domestic and wild animals (e.g. birds and wild pigs) that eat the fruit"
4.06	1. University of Florida IFAS EDIS. https://edis.ifas.ufl.edu/fp043 (Accessed: 8 January 2016)	1. "Pest resistance: long-term health usually not affected by pests... No pests or diseases are of major concern. Caterpillars will occasionally chew holes in the leaves."; No evidence that it is a significant primary or alternate host for any pest
4.07	1. Menninger, E. A. 1970. Flowering vines of the world. Hearthside press incorporated. New York. 2. Eat the Weeds. http://www.eattheweeds.com/antigonon-leptopus-creeping-cuisine-2/ (Accessed: 8 January 2015)	1. The tubers are edible and are valued in the native area for the nutlike flavor. 2. Plant is used for food, tea, and medicinal purposes.
4.08	1. Queensland Government. Weeds of Australia. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016) 2. Pacific Island Ecosystems at Risk. http://www.hear.org/pier/species/antigonon_leptopus.htm (Accessed: 8 January 2016)	1. "In the wet-dry climate of northern Australia, its leaves dry out and drop during the dry season thereby providing fuel for damaging fires." 2. "Leaves dry out and drop during the dry season providing fuel for damaging fires."
4.09	1. Neil, M. C. 1965. In gardens of Hawaii. Bishop museum press. 2. Plant master 5.5 CD Rom. 3. Missouri Botanical Garden. http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a486 (Accessed: 8 January 2016)	1. 'From Mexico comes a sun loving vine with ...' 2. Requires full sun to half sun. 3. Full sun

4.10	1. Plant Master 5.5 CDROM 2. http://www.hear.org/pier/anlep.htm 3. Atlas of Florida Vascular Plants. http://florida.plantatlas.usf.edu/Plant.aspx?id=1578 (Accessed: 8 January 2016) 4. University of Florida Soil and Water Science Department. https://soils.ifas.ufl.edu/faculty/grunwald/research/projects/NRC_2001/NRC.shtml (Accessed: 8 January 2016) 5. South Florida Water Management District. http://www.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/interimrpt_98/chpt3.pdf (Accessed: 8 January 2016)	1. Sand, loam and rocky -unparticular of soil type. pH neutral 2. Favors limestone (basic) soils 3. See distribution map. 4. See Florida soil map. Present in areas with histosols. 5. "The Everglades is an oligotrophic (nutrient poor) wetland." Plant is present in the Everglades.
4.11	1. Menninger, E. A. 1970. Flowering vines of the world. Hearthsides Press incorporated. New York. 2. http://www.hear.org/pier/anlep.htm 3. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 8 January 2016)	1. It is a climbing plant. -'Whether herbaceous or woody, in tropical areas it becomes rampant and vigorous covering tree, buildings, banks or fields.' 2. Smothering vine 3. "Coral vine is a fast growing climbing vine that holds via tendrils, and is able to reach 25 feet or more in length."
4.12	1. Queensland Government. Weeds of Australia. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016) 2. Botanical Society of South Africa. http://www.botanicalsociety.org.za/BranchesAndGardens/SiteAssets/SitePages/Garden%20Route/Article%20138%20Updated%20List%20Antigonon%20leptopus_Coral%20vine.doc (Accessed: 8 January 2016)	1. "It has spread from cultivation as a fence climber into nearby riparian vegetation and monsoon vine thickets." 2. "Antigonon leptopus invades coastal and inland bush and thicket."
5.01	1. CABI. http://www.cabi.org/isc/datasheet/112316 (Accessed: 8 January 2016)	1. Littoral and Terrestrial habitats
5.02	1. USDA Plants Database. http://plants.usda.gov/core/profile?symbol=Anle4 (Accessed: 8 January 2016)	1. "Growth Habit: Vine"
5.03	1. USDA Plants Database. http://plants.usda.gov/core/profile?symbol=Anle4 (Accessed: 8 January 2016) 2. CABI. http://www.cabi.org/isc/datasheet/112316 (Accessed: 8 January 2016)	1. "Family: Polygonaceae" 2. "woody vine" No evidence of nitrogen fixation.
5.04	1. Wagner, W. L., D. R. Herbst & S. H. Sohmer. 1990. Manual of flowering plants of Hawaii. University of Hawaii at Press. Honolulu. 2. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 8 January 2016)	1. 'Climbing vine from an enlarged tuber-like root. 2. "This species is a perennial and forms underground tubers and large rootstocks."
6.01		No evidence
6.02	1. Queensland Government. Weeds of Australia. http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. "This species reproduces by seed and also vegetatively via tubers, root suckers and stem segments." See photos.
6.03		No evidence
6.04	1. Aluri, R. S. J., V. R. Kanaka, P. Victor & A. Naidu. 2001. Floral ecology, breeding system and pollination in <i>Antigonon leptopus</i> L. (Polygonaceae). <i>Plant species biology</i> . Vol 16: 159-164.	1. '...the flowers have a staminate phase on the first day and pistillate phase on the second day; they are completely protandrous.' 'The floral sexual behavior precludes selfing within the same flower.' A few pistillate flowers might be open when the staminate flowers. This temporal dioecy in the mating system is suggested to facilitate cross pollination when pollinators are present and self pollination when pollinators are absent. However during their experiment the authors observed that both self and cross pollination were obligately dependent on pollinator activity.
6.05	1. Aluri, R. S. J., V. R. Kanaka, P. Victor & A. Naidu. 2001. Floral ecology, breeding system and pollination in <i>Antigonon leptopus</i> L. (Polygonaceae). <i>Plant species biology</i> . Vol 16: 159-164.	1. A variety of insects like bees and thrips are known to pollinate it.

6.06	1. Aluri, R. S. J., V. R. Kanaka, P. Victor & A. Naidu. 2001. Floral ecology, breeding system and pollination in <i>Antigonon leptopus</i> L. (Polygonaceae). <i>Plant species biology</i> . Vol 16: 159-164. 2. Queensland Government. <i>Weeds of Australia</i> . http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. ' <i>Antigonon leptopus</i> is also capable of thriving by vegetative reproduction. The dual reproductive behavior exhibited by <i>A. leptopus</i> is an adaptation for its survival as a successful weed in tropical latitudes' 2. "This species reproduces by seed and also vegetatively via tubers, root suckers and stem segments."
6.07		No evidence
7.01	1. Queensland Government. <i>Weeds of Australia</i> . http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. "Pieces of its trailing stems may be broken off and carried about during earthmoving operations and by floodwaters. Tubers and root segments can also be spread by the movement of soil."; insufficient evidence
7.02	1. Queensland Government. <i>Weeds of Australia</i> . http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016) 2. Amazon. http://www.amazon.com/Antigonon-leptopus-Seeds-CORAL-VINE/dp/B008J6YI71 (Accessed: 8 January 2016)	1. "This species is widely cultivated in northern and eastern Australia for its attractive bright pink flowers. A cultivar with white flowers (i.e. <i>Antigonon leptopus</i> 'Alba') is sometimes also seen in gardens, and a cultivar with dark red flowers (i.e. <i>Antigonon leptopus</i> 'Baja Red') is grown overseas." 2. Can be purchased online
7.03		No evidence
7.04	1. Queensland Government. <i>Weeds of Australia</i> . http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. No evidence, but unlikely because the seeds do not exhibit adaptation to wind dispersal. See photos.
7.05	1. http://www.hear.org/pier/anlep.htm 2. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 9 December 2015) 3. Queensland Government. <i>Weeds of Australia</i> . http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. 'Seeds float on water, which helps transport them to new locations.' 2. "the seeds will float on water, dispersing the plant to new locations" 3. "The seeds float on water"
7.06	1. http://www.hear.org/pier/anlep.htm 2. Queensland Government. <i>Weeds of Australia</i> . http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. 'Fruits and seeds are eaten and spread by domestic and wild animals (birds, pigs).' 2. "spread to new locations by domestic and wild animals (e.g. birds and wild pigs) that eat the fruit"
7.07	1. Queensland Government. <i>Weeds of Australia</i> . http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. No evidence, but unlikely because the seeds do not exhibit any mechanism of attachment. See photos.
7.08	1. http://www.hear.org/pier/anlep.htm 2. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 8 January 2016) 3. Queensland Government. <i>Weeds of Australia</i> . http://keyserver.lucidcentral.org/weeds/data/080c0106-040c-4508-8300-0b0a06060e01/media/html/Antigonon_leptopus.htm (Accessed: 8 January 2016)	1. 'Fruits and seeds are eaten and spread by domestic and wild animals (birds, pigs).' 2. "Fruits and seeds are eaten and spread by wildlife such as birds, raccoons, and pigs." 3. "spread to new locations by domestic and wild animals (e.g. birds and wild pigs) that eat the fruit"
8.01	1. http://www.hear.org/pier/anlep.htm 2. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 9 December 2015)	1. "Prolific seed producer" but few seeds per fruit 2. "Not only is coral vine a prolific seed producer"
8.02	1. Horticultural Impex. http://www.ehorticulture.com/tree-plants-seeds/ornamental-plants/antigonon-leptopus-detail.html (Accessed: 8 January 2016)	1. "Seed Longevity: 1-2 years"
8.03	1. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 8 January 2016) 2. Pacific Island Ecosystems at Risk. http://www.hear.org/pier/species/antigonon_leptopus.htm (Accessed: 8 January 2016)	1. "There is limited research and data on biological control of coral vine." 2. "Chemical: "Pending the results of field trials infestations...should be sprayed with 2% Roundup plus Pulse after rain when the leaves are free of dust and the plants are growing vigorously" (Swarbrick, 1997; p. 19). "Triclopyr (Garlon 4) can be used as a foliar spray" (Englberger, 2009, p. 3)." Insufficient evidence.

8.04	1. http://www.hear.org/pier/anlep.htm 2. UF/IFAS Center for Aquatic and Invasive Plants. http://plants.ifas.ufl.edu/plant-directory/antigonon-leptopus/ (Accessed: 8 January 2016)	1. Geophyte-- Cutting alone is ineffective. Underground tubers must be removed or plants will re-sprout. 2. "Continuous cutting will be effective in depleting food reserves, but this process will take several cycles. If plants are physically removed, underground tubers must be removed or plants will re-sprout."
8.05		No evidence