

Assessment date 4 Aug 2015

<i>Petrea volubilis</i> South		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	unk	
3.04	Environmental weed	unk	
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	unk	-1
4.05	Toxic to animals	unk	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	unk	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	unk	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	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)	3	0
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	n	-1
7.04	Propagules adapted to wind dispersal	y	1
7.05	Propagules water dispersed	unk	-1
7.06	Propagules bird dispersed	unk	-1
7.07	Propagules dispersed by other animals (externally)	unk	-1
7.08	Propagules dispersed by other animals (internally)	unk	-1
8.01	Prolific seed production	n	-1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	unk	-1
8.03	Well controlled by herbicides	unk	1
8.04	Tolerates, or benefits from, mutilation or cultivation	unk	-1
8.05		?	
Total Score		1	
Implemented Pacific Second Screening		yes	
Risk Assessment Results		Low/SS	

section	# questions answered	satisfy minimum?
A		8 yes
B		7 yes
C		13 yes
total		28 yes

Assessment date 4 Aug 2015

<i>Petrea volubilis</i> Central		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)	1	
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	unk	
3.04	Environmental weed	unk	
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	unk	-1
4.05	Toxic to animals	unk	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	unk	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	unk	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	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)	3	0
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	n	-1
7.04	Propagules adapted to wind dispersal	y	1
7.05	Propagules water dispersed	unk	-1
7.06	Propagules bird dispersed	unk	-1
7.07	Propagules dispersed by other animals (externally)	unk	-1
7.08	Propagules dispersed by other animals (internally)	unk	-1
8.01	Prolific seed production	n	-1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	unk	-1
8.03	Well controlled by herbicides	unk	1
8.04	Tolerates, or benefits from, mutilation or cultivation	unk	-1
8.05		?	
Total Score		1	
Implemented Pacific Second Screening		yes	
Risk Assessment Results		Low/SS	

section	# questions answered	satisfy minimum?
A		8 yes
B		7 yes
C		13 yes
total		28 yes

Assessment date 4 Aug 2015

<i>Petrea volubilis</i> North		Answer	Score
1.01	Is the species highly domesticated?	y	1
1.02	Has the species become naturalised where grown?	y	1
1.03	Does the species have weedy races?	y	
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	y	1
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	y	1
2.03	Broad climate suitability (environmental versatility)	unk	
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	unk	
2.05	Does the species have a history of repeated introductions outside its natural range?	unk	
3.01	Naturalized beyond native range	n	0
3.02	Garden/amenity/disturbance weed	unk	0
3.03	Weed of agriculture	n	0
3.04	Environmental weed	unk	-1
3.05	Congeneric weed	unk	0
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	n	0
4.03	Parasitic	unk	0
4.04	Unpalatable to grazing animals	n	0
4.05	Toxic to animals	y	1
4.06	Host for recognised pests and pathogens	y	1
4.07	Causes allergies or is otherwise toxic to humans	unk	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.	n	0
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	n	0
5.01	Aquatic	y	1
5.02	Grass	unk	-1
5.03	Nitrogen fixing woody plant	unk	-1
5.04	Geophyte	n	0
6.01	Evidence of substantial reproductive failure in native habitat	y	1
6.02	Produces viable seed	3	0

6.03	Hybridizes naturally	unk	-1
6.04	Self-compatible or apomictic	y	1
6.05	Requires specialist pollinators	n	-1
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	unk	-1
7.03	Propagules likely to disperse as a produce contaminant	unk	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed	unk	-1
7.06	Propagules bird dispersed	unk	1
7.07	Propagules dispersed by other animals (externally)	unk	-1
7.08	Propagules dispersed by other animals (internally)	?	
8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	?	
8.03	Well controlled by herbicides	unk	1
8.04	Tolerates, or benefits from, mutilation or cultivation	unk	-1
8.05		?	
Total Score			-1
Implemented Pacific Second Screening			no
Risk Assessment Results			Low

section	# questions answered	satisfy minimum?
A		8 yes
B		7 yes
C		13 yes
total		28 yes

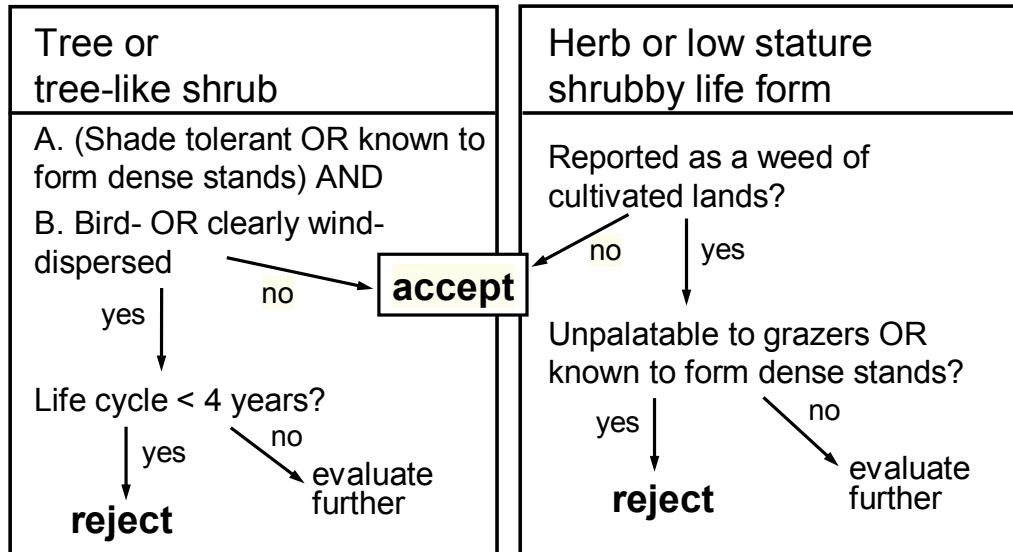
	Reference	Source data
1.01		Cultivated, but no evidence of selection for reduced weediness
1.02		Skip to 2.01
1.03		Skip to 2.01
2.01	1. PERAL NAPPFAST Global Plant Hardiness. http://www.nappfast.org/Plant_hardiness/2012/PHZ%20update201230%20yr%20%20300dpi.tif (Accessed: 4 August 2015) 2. Missouri Botanical Garden. http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a539 (Accessed: 4 August 2015) 3. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 5 August 2015) 4. USDA Germplasm Resources Information Network. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?312891 (Accessed: 5 August 2015)	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. 2. Present in the following global plant hardiness zones: 10 and 11. 3. "Origin: Southern Mexico, Central America, South America, Caribbean" 4. Native to Mexico, Antigua and Barbuda, Cuba, Dominican Republic, Guadeloupe, Jamaica, Puerto Rico, Trinidad and Tobago, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, French Guiana, Guyana, Suriname, Venezuela, Brazil, Bolivia, Colombia, Ecuador, Peru, and Paraguay.
2.02		Native range well known, Zone 10 only accounts for part of the Central Zone.
2.03	1. The University of Melbourne. Köppen-Geiger Climate Map of the World. http://people.eng.unimelb.edu.au/mpeel/koppen.html (Accessed: 4 August 2015) 2. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 5 August 2015) 3. USDA Germplasm Resources Information Network. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?312891 (Accessed: 5 August 2015)	1. Present in the following Köppen-Geiger Climate zones: Af, Am, Aw, BWh, BWk, BSh, BSk, Csa, Cwa, Cwb, Cfa, and Cfb. 2. "Origin: Southern Mexico, Central America, South America, Caribbean" 3. Native to Mexico, Antigua and Barbuda, Cuba, Dominican Republic, Guadeloupe, Jamaica, Puerto Rico, Trinidad and Tobago, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, French Guiana, Guyana, Suriname, Venezuela, Brazil, Bolivia, Colombia, Ecuador, Peru, and Paraguay.
2.04	1. Climate Charts. World Climate Maps. http://www.climate-charts.com/World-Climate-Maps.html#rain (Accessed: 4 August 2015) 2. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 5 August 2015) 3. USDA Germplasm Resources Information Network. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?312891 (Accessed: 5 August 2015)	1. Native to areas with rainfall in these ranges. 2. "Origin: Southern Mexico, Central America, South America, Caribbean" 3. Native to Mexico, Antigua and Barbuda, Cuba, Dominican Republic, Guadeloupe, Jamaica, Puerto Rico, Trinidad and Tobago, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, French Guiana, Guyana, Suriname, Venezuela, Brazil, Bolivia, Colombia, Ecuador, Peru, and Paraguay.
2.05	1. USDA Plants Database. http://plants.usda.gov/core/profile?symbol=PEVO (Accessed: 5 August 2015) 2. Dave's Garden. http://davesgarden.com/guides/pf/go/54548/#b (Accessed: 5 August 2015)	1. Introduced to Florida 2. Said to grow in: Arizona, California, Florida, Hawaii, Maine, Mississippi, Puerto Rico, South Carolina, Texas, and the Virgin Islands.
3.01	1. The Institute for Regional Conservation. http://regionalconservation.org/ircs/database/plants/PlantPage.asp?TXCODE=Petrvolu (Accessed: 5 August 2015)	1. "South Florida Native Status: Not Native, Naturalized"
3.02	1. Global Compendium of Weeds. http://www.hear.org/gcw/species/petrea_volubilis/ (Accessed: 4 August 2015)	1. Classified as garden thug and weed.
3.03		No evidence
3.04		No evidence
3.05		No evidence

4.01	1. Missouri Botanical Garden. http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a539 (Accessed: 5 August 2015) 2. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 5 August 2015)	1 & 2. These characteristics are not listed in the description of the plant
4.02		No evidence
4.03		No evidence
4.04		No evidence
4.05		No evidence
4.06	1. Nursery Management. http://www.nurserymag.com/nm0615-tropical-queens-wreath-%20Pvolubilis.aspx (Accessed: 4 August 2015) 2. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 4 August 2015)	1. "It doesn't have any major pest or disease problems" 2. "Major Potential Pests: None" --- No evidence that it is a significant primary of alternate host
4.07	1. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 4 August 2015)	1. "Human Hazards: None"
4.08		No evidence
4.09	1. Nursery Management. http://www.nurserymag.com/nm0615-tropical-queens-wreath-%20Pvolubilis.aspx (Accessed: 4 August 2015) 2. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 4 August 2015)	1. "It grows best in partial to full sun" 2. "Light Requirements: High, medium" "Full sun or broken shade"
4.10	1. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 4 August 2015) 2. Florida Gardener. http://www.floridagardener.com/pom/pvolubilis.htm (Accessed: 4 August 2015)	1. "Soil Tolerance: Wide" 2. "Soil Requirements: Does best in rich, moist, well-drained soil -- although can be grown in almost any type soil"
4.11	1. Flowers of India. http://www.flowersofindia.net/catalog/slides/Purple%20Wreath.html (Accessed: 4 August 2015) 2. B&T World Seeds. http://b-and-t-world-seeds.com/cartall.asp?species=Petrea%20volubilis&sref=1934 (Accessed: 4 August 2015)	1. Classified as a climber 2. Classified within "Climbing Plant Seeds" "Type of plant - climber"
4.12		No evidence
5.01	1. USDA Germplasm Resources Information Network. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?312891 (Accessed: 5 August 2015)	1. "Family: Verbenaceae"
5.02	1. USDA Germplasm Resources Information Network. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?312891 (Accessed: 5 August 2015)	1. "Family: Verbenaceae"
5.03	1. Nursery Management. http://www.nurserymag.com/nm0615-tropical-queens-wreath-%20Pvolubilis.aspx (Accessed: 4 August 2015)	1. Described as a "woody vine"
5.04		No evidence of specialized structures
6.01		No evidence of substantial reproductive failure

6.02	1. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 4 August 2015) 2. Florida Gardener. http://www.floridagardener.com/pom/pvolubilis.htm (Accessed: 4 August 2015) 3. Dave's Garden. http://davesgarden.com/guides/pf/go/54548/#b (Accessed: 4 August 2015) 4. Puerto Rico Federal Experiment Station. https://books.google.com/books?id=u8I1AAAAIAAJ&pg=RA4-PA42&lpg=RA4-PA42&dq=%22Petrea+volubilis%22+seed&source=bl&ots=IB5CqUqD63&sig=7oMRDZDtGhKz2Oej8DTICQyNgk&hl=en&sa=X&ved=0CDEQ6AEwBDgUahUKEwjN6Kiy5I_HAhXHFx4KHatzADA#v=onepage&q=%22Petrea%20volubilis%22%20seed&f=false (Accessed: 4 August 2015)	1. "If the flowers have been pollinated earlier, a fruit capsule develops in the center of the calyx. The calyx takes on the role of flight wings and assist in seed dispersal by spinning on the wind like little helicopters" 2. "Propagation: Seeds, cuttings, air layers, or division of root suckers." 3. "Propagation Methods: From seed; direct sow after last frost" 4. "Propagation is by seeds"
6.03		No evidence
6.04		No evidence
6.05	1. Nursery Management. http://www.nurserymag.com/nm0615-tropical-queens-wreath-%20Pvolubilis.aspx (Accessed: 4 August 2015)	1. "It attracts hummingbirds and bees"
6.06	1. Florida Gardener. http://www.floridagardener.com/pom/pvolubilis.htm (Accessed: 4 August 2015)	1. "Propagation: Seeds, cuttings, air layers, or division of root suckers."
6.07	1. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 4 August 2015)	1. "Queen's Wreath begin flowering while still quite young, requiring two to three years to bloom effectively."
7.01		No evidence
7.02	1. Almost Eden. http://almostedenplants.com/shopping/products/583-Queen's-Wreath-Sandpaper-Vine-Blue-Petrea-Purple-Wreath/ (Accessed: 4 August 2015) 2. Nursery Management. http://www.nurserymag.com/nm0615-tropical-queens-wreath-%20Pvolubilis.aspx (Accessed: 4 August 2015)	1. Available for purchase online 2. "It's cultivated in tropical regions for outdoor ornamental use"
7.03		No evidence
7.04	1. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 4 August 2015)	1. "The calyx takes on the role of flight wings and assist in seed dispersal by spinning on the wind like little helicopters"
7.05		No evidence
7.06		No evidence
7.07		No evidence
7.08		No evidence
8.01	1. University of Florida IFAS Extension Lee County. http://lee.ifas.ufl.edu/Hort/GardenPubsAZ/Queens_Wreath.pdf (Accessed: 5 August 2015)	1. "seed is rarely produced"
8.02		No evidence
8.03		No evidence
8.04		No evidence
8.05		No evidence

Pacific second screening: decision rules for species with WRA scores between 1 and 6

(from Daehler *et al.* 2004)



Vines must pass both tests