

Assessment date 18 April 2016

<b><i>Clematis terniflora</i> ALL ZONES</b>		<b>Answer</b>	<b>Score</b>
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	unk	
3.03	Weed of agriculture	n	0
3.04	Environmental weed	y	4
3.05	Congeneric weed	y	2
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	?	
4.06	Host for recognised pests and pathogens	n	0
4.07	Causes allergies or is otherwise toxic to humans	unk	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	y	1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	?	
6.07	Minimum generative time (years)	2	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	unk	-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	y	1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	unk	-1
8.03	Well controlled by herbicides	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation	y	1
8.05		?	
<b>Total Score</b>		<b>9</b>	
<b>Implemented Pacific Second Screening</b>		<b>no</b>	
<b>Risk Assessment Results</b>		<b>High</b>	

section	# questions answered	satisfy minimum?
A		10 yes
B		6 yes
C		14 yes
total		30 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	<p>1. PERAL NAPPFAST Global Plant Hardiness. <a href="http://www.nappfast.org/Plant_hardiness/2012/PHZ%20update%201230%20yr%20%20300dpi.tif">http://www.nappfast.org/Plant_hardiness/2012/PHZ%20update%201230%20yr%20%20300dpi.tif</a> (Accessed: 22 January 2016) 2. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. <i>Invasive Plant Science and Management</i>. 2(1): 70-73. 3. 2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a> 4. Dave's Garden. <a href="http://davesgarden.com/guides/pf/go/683/#b">http://davesgarden.com/guides/pf/go/683/#b</a> (Accessed: 22 January 2016)</p>	<p>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. "Japanese clematis, a herbaceous to woody vine native to Asia, has been widely used for landscaping in the southeastern United States and is now a naturalized and invasive in Florida." ... "This species has become widely naturalized in the eastern United States and is found west through Nebraska, south through Florida, and east through New Hampshire Moreno and Essig 1997)." 3. "Native: ASIA-TEMPERATE Mongolia: Mongolia Russian Far East: Russian Federation - Amur, Primorye China: China - Anhui, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Monggol, Shaanxi, Shanxi, Zhejiang Eastern Asia: Japan - Hokkaido, Honshu, Kyushu, Shikoku; Korea; Taiwan" [Invasive in Central &amp; Northern Florida. Marginally subtropical] (Native to USDA Climate Zones 4 through 10) 4. Grows in USDA Hardiness Zones 4 through 9.</p>
2.02		Native range well known.
2.03	<p>1. The University of Melbourne. Köppen-Geiger Climate Map of the World. <a href="http://people.eng.unimelb.edu.au/mpeel/koppen.html">http://people.eng.unimelb.edu.au/mpeel/koppen.html</a> (Accessed: 22 January 2016) 2. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. <i>Invasive Plant Science and Management</i>. 2(1): 70-73. 3. 2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a></p>	<p>1. Native to Köppen-Geiger Climate Zones BWk, BSk, Cwa, Cfa, Dsc, Dwb, Dwd, Dfa, Dfb, and Dfc. 2. "Japanese clematis, a herbaceous to woody vine native to Asia, has been widely used for landscaping in the southeastern United States and is now a naturalized and invasive in Florida." ... "This species has become widely naturalized in the eastern United States and is found west through Nebraska, south through Florida, and east through New Hampshire Moreno and Essig 1997)." 3. "Native: ASIA-TEMPERATE Mongolia: Mongolia Russian Far East: Russian Federation - Amur, Primorye China: China - Anhui, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Monggol, Shaanxi, Shanxi, Zhejiang Eastern Asia: Japan - Hokkaido, Honshu, Kyushu, Shikoku; Korea; Taiwan" [Invasive in Central &amp; Northern Florida. Marginally subtropical]</p>
2.04	<p>1. Climate Charts. World Climate Maps. <a href="http://www.climate-charts.com/World-Climate-Maps.html#rain">http://www.climate-charts.com/World-Climate-Maps.html#rain</a> (Accessed: 22 January 2016) 2. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. <i>Invasive Plant Science and Management</i>. 2(1): 70-73. 3. 2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a></p>	<p>1. Native to areas with rainfall within these ranges. 2. "Japanese clematis, a herbaceous to woody vine native to Asia, has been widely used for landscaping in the southeastern United States " ... "This species has become widely naturalized in the eastern United States and is found west through Nebraska, south through Florida, and east through New Hampshire Moreno and Essig 1997)." 3. "Native: ASIA-TEMPERATE Mongolia: Mongolia Russian Far East: Russian Federation - Amur, Primorye China: China - Anhui, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Monggol, Shaanxi, Shanxi, Zhejiang Eastern Asia: Japan - Hokkaido, Honshu, Kyushu, Shikoku; Korea; Taiwan" [Invasive in Central &amp; Northern Florida. Marginally subtropical]</p>

2.05	<p>1. 1941. Thaanum, D.. Specimen Details for Clematis maximovicziana Franch. &amp; Sav. [BISH 770155]. Bishop Museum, <a href="http://nsdb.bishopmuseum.org/2873CF83-06E9-48D0-A02A-B3D15BEA940F">http://nsdb.bishopmuseum.org/2873CF83-06E9-48D0-A02A-B3D15BEA940F</a> 2. 1985. Lau, J.. Specimen Details for Clematis maximovicziana Franch. &amp; Sav. [BISH 500048]. Bishop Museum, <a href="http://nsdb.bishopmuseum.org/F045811E-72B0-4AF1-B64D-3177723DBE78">http://nsdb.bishopmuseum.org/F045811E-72B0-4AF1-B64D-3177723DBE78</a> 3. 2005. Imada, C.T./Staples, G.W./Herbst, D.R.. Annotated Checklist of Cultivated Plants of Hawai'i. The Bishop Museum, <a href="http://www2.bishopmuseum.org/HBS/botany/cultivatedplants/">http://www2.bishopmuseum.org/HBS/botany/cultivatedplants/</a> 4. National Parks Service. <a href="http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm">http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm</a> (Accessed: 22 January 2016) 5. Global Invasive Species Database. <a href="http://www.issg.org/database/species/ecology.asp?si=1224&amp;fr=1&amp;sts=sss&amp;lang=EN">http://www.issg.org/database/species/ecology.asp?si=1224&amp;fr=1&amp;sts=sss&amp;lang=EN</a> (Accessed: 4 February 2016)</p>	<p>1. "USA - Hawaii - Oahu - Honolulu: Manoa Valley" [Collected as Clematis maximovicziana Franch. &amp; Sav. Syn: Clematis terniflora] 2. "USA - Hawaii - Oahu - U.H.Campus, Sherman Laboratory" [Collected as Clematis maximovicziana Franch. &amp; Sav. Syn: Clematis terniflora] 3. "Clematis maximovicziana Franchet &amp; Savatier" ... "First Collected: 1941 Locations: Hilo Forestry Arboretum, Hilo, Hawai'i " [Syn. of Clematis terniflora] 4. "was introduced into the United States as an ornamental vine and is still widely sold in the nursery trade." 5. "Known introduced range: North America, Europe (Clemson, undated)"</p>
3.01	<p>1. 2008. Ashton, I.W./Lerdau, M.T.. Tolerance to herbivory, and not resistance, may explain differential success of invasive, naturalized, and native North American temperate vines. Diversity and Distributions. 14: 169–178. 2. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. Invasive Plant Science and Management. 2(1): 70-73. 3. Illinois Wildflowers. <a href="http://www.illinoiswildflowers.info/weeds/plants/aut_clematis.htm">http://www.illinoiswildflowers.info/weeds/plants/aut_clematis.htm</a> (Accessed: 4 February 2016) 4. University of Michigan. <a href="http://climbers.lsa.umich.edu/?p=448">http://climbers.lsa.umich.edu/?p=448</a> (Accessed: 4 February 2016)</p>	<p>1. "Table 1. The 12 temperate vine species used in this study. Invasive vines as those listed as invasive species in the USDA national plants database (USDA-NRCS, 2001). We follow the terminology of Pysek et al. (2004)." [Clematis terniflora = Invasive] 2. "Japanese clematis, a herbaceous to woody vine native to Asia, has been widely used for landscaping in the southeastern United States and is now a naturalized and invasive in Florida." ... "This species has become widely naturalized in the eastern United States and is found west through Nebraska, south through Florida, and east through New Hampshire Moreno and Essig 1997)." 3. "Autumn Clematis has naturalized in widely scattered locations across Illinois" 4. "Cultivated in the U.S. since 1877, C. terniflora has naturalized in many states"</p>
3.02	<p>1. 2013. Dave's Garden. PlantFiles: Sweet Autumn Clematis, Sweet Autumn Virgin's Bower, Japanese Clematis - Clematis terniflora. <a href="http://davesgarden.com/guides/pf/go/683/">http://davesgarden.com/guides/pf/go/683/</a> [Accessed 04 Oct 2013] 2. National Parks Service. <a href="http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm">http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm</a> (Accessed: 5 February 2016)</p>	<p>1. "On Sep 24, 2013, tsemple from Broken Arrow, OK wrote: I made the horrible mistake of planting this nasty plant on an arbor about four years ago. It bloomed beautifully. The next year I had it sprouting (from seed) over my entire yard which is 80% garden. Unfortunately, they mostly aren't noticed until they have grown up inside a shrub or plant. If you pull them, they break off at the ground, then grow right back. It's always windy in Oklahoma, so using a spray herbicide is iffy most days, because of the danger of killing desirable plants. This weed makes me crazy and if you value your sanity, do NOT plant it. Invasive is much too nice a term for it." 2. "This species is found invading forest edges, right-of-ways and urban areas along streams and roads. It grows vigorously over other vegetation, forming dense blankets that block sunlight to the plants underneath."</p>
3.03		No evidence

3.04	<p>1. 2002. Bowen, B./Johnson, K./Franklin, S./Call, G./Webber, M.. Invasive Exotic Pest Plants in Tennessee. Journal of the Tennessee Academy of Science. 77(2): 45-48. 2. 2008. Central Jersey Invasive Species Strike Team. Invasive Plant Fact Sheet - Japanese Clematis (<i>Clematis terniflora</i>). <a href="http://www.fohvos.org/pdfs/factsheets/Clematis%20terniflora_Invasive%20Plants%20Fact%20Sheet.pdf">http://www.fohvos.org/pdfs/factsheets/Clematis%20terniflora_Invasive%20Plants%20Fact%20Sheet.pdf</a> 3. 2008. Meisenburg, M./Langeland, K./Vollmer, K.. Japanese clematis, <i>Clematis terniflora</i> (D.C.) Ranunculaceae. SS AGR 309. University of Florida, IFAS, Gainesville, FL 4. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control <i>Clematis terniflora</i> Invading Natural Areas in Gainesville, Florida. Invasive Plant Science and Management. 2(1): 70-73. 5. University of Michigan. <a href="http://climbers.lsa.umich.edu/?p=448">http://climbers.lsa.umich.edu/?p=448</a> (Accessed: 4 February 2016) 6. National Parks Service. <a href="http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm">http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm</a> (Accessed: 5 February 2016)</p>	<p>1. "Rank 2 - Significant Threat. Exotic plant species that possess characteristics of invasive species but are not presently considered to spread as easily into native plant communities as those species listed as Rank 1." [Includes <i>Clematis terniflora</i>] 2. "Japanese clematis can quickly overtop shrubs and trees, completely shading them from the sun. Its dense growth crowds out native plants. In the absence of vegetation or other structures to climb, Japanese clematis will create will create dense mats that suppress the growth of other plant life." 3. "By contrast, Japanese clematis is considered invasive by exotic/invasive plant councils in Alabama, Georgia, Tennessee, South Carolina, and the Mid-Atlantic, as well as in Florida. Given the invasive designation these councils have assigned to Japanese clematis, and considering, as well, the plant's tendency to escape cultivation and invade intact natural areas, it would be prudent not to cultivate this plant in Florida" 4. "It has invaded natural areas of Florida, and was added to the Florida Exotic Pest Plant Council Category II list of invasive plant species in 2005 (Florida Exotic Pest Plant Council 2005). Plants are placed on this list if they are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives." ... "New populations of Japanese clematis have been occurring with increased frequency in Gainesville, FL (Alachua County) for several years, and this species is an increasing problem in natural areas of the city (G. Parks, personal communication 2005)." ... "Japanese clematis has sufficient impacts on native plant communities in natural areas of Gainesville that in 2005, Gainesville's Nature Operations Division implemented control measures in natural areas." 5. "Cultivated in the U.S. since 1877, <i>C. terniflora</i> has naturalized in many</p>
3.05	<p>1. 2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK 2. 2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia 2. Global Compendium of Weeds. <a href="http://www.hear.org/gcw/species/clematis_orientalis/">http://www.hear.org/gcw/species/clematis_orientalis/</a> (Accessed: 7 February 2016)</p>	<p>1. "<i>Clematis vitalba</i>" ... "It is invasive because it forms a dense smothering blanket over native trees, impeding their growth and increasing wind and ice damage." 2. Yes. Multiple species listed] 2. <i>Clematis orientalis</i> is classified as a noxious weed. <i>Clematis vitalba</i> is classified as a noxious weed.</p>
4.01	<p>1. 2001. Wu, Z.Y./Raven,P.H./Hong, D.Y. (eds.). Flora of China. Vol. 6 (Caryophyllaceae through Lardizabalaceae). Science Press &amp; Missouri Botanical Garden Press, Beijing &amp; St. Louis 2. Floridata. <a href="http://floridata.com/Plants/Ranunculaceae/Clematis%20terniflora/933">http://floridata.com/Plants/Ranunculaceae/Clematis%20terniflora/933</a> (Accessed: 7 February 2016) 3. Center for Invasive Species and Ecosystem Health. <a href="http://www.invasive.org/browse/subinfo.cfm?sub=5354">http://www.invasive.org/browse/subinfo.cfm?sub=5354</a> (Accessed: 7 February 2016)</p>	<p>1. "Vines woody. Branches shallowly 4–10 grooved, puberulous or only nodes puberulous. Leaves pinnate, 5(–7)-foliolate; petiole 2.5–4.5 cm; leaflet blades ovate to narrowly ovate, sometimes ovate lanceolate, 2.5–8 × 1–4.2 cm, papery to subleathery, both surfaces sparsely puberulous, glabrescent, base rounded, subcordate, or broadly cuneate, margin entire, apex acute to obtuse; basal veins abaxially ± prominent to nearly flat. Cymes axillary or terminal, usually many flowered; peduncle 1–7 cm; bracts linear, elliptic, or oblong, 0.8–3.5(–5) cm." 2&amp;3. These features are not listed in the description of the plant.</p>
4.02	<p>1. Allelopathy Journal. <a href="http://search.proquest.com/docview/1443358023?pq-origsite=gscholar">http://search.proquest.com/docview/1443358023?pq-origsite=gscholar</a> (Accessed: 9 February 2016)</p>	<p>No evidence of allelopathy in a natural setting 1. <i>Clematis terniflora</i> was found to have a high level of inhibition activity when evaluated using the sandwich method</p>
4.03		<p>No evidence</p>

4.04	<p>1. 2000. Jayasekara, P./Takatsuki, S.. Seasonal food habits of a sika deer population in the warm temperate forest of the westernmost part of Honshu, Japan. <i>Ecological Research</i>. 15: 153–157. 2. 2010. Male-Brune, R.. Deer resistance rating for landscape plants. <a href="http://www.gardeningindeercountry.com/plant-table.php">http://www.gardeningindeercountry.com/plant-table.php</a> 3. 2013. Hilty, J.. Weedy Wildflowers of Illinois - Autumn Clematis - <i>Clematis terniflora</i>. <a href="http://www.illinoiswildflowers.info/weeds/plants/aut_clematis.htm">http://www.illinoiswildflowers.info/weeds/plants/aut_clematis.htm</a> [Accessed 04 Oct 2013] 4. 2013. Missouri Botanical Gardens. <i>Clematis terniflora</i>. <a href="http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a300">http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a300</a> [Accessed 04 Oct 2013]</p>	<p>1. "The material recovered from the rumen contents of the sika deer contained: leaves of bamboo (<i>Pleioblastus chino</i> Makino), monocotyledonous herbs (<i>Ophiopogon</i> spp.), forbs (<i>Polygala</i> spp., <i>Clematis terniflora</i> DC. <i>Phaseolus</i> sp.), shrubs..." 2. "Deer Resistance Table" ... "<i>Clematis terniflora</i>" ... "Never Browsed" 3. "Because the foliage of Autumn Clematis is toxic, it is not eaten by mammalian herbivores." 4. "Tolerate: Deer, Black Walnut"</p>
4.05	<p>1. 2013. Hilty, J.. Weedy Wildflowers of Illinois - Autumn Clematis <i>Clematis terniflora</i>. <a href="http://www.illinoiswildflowers.info/weeds/plants/aut_clematis.htm">http://www.illinoiswildflowers.info/weeds/plants/aut_clematis.htm</a> [Accessed 04 Oct 2013] 2. Dave's Garden. <a href="http://davesgarden.com/guides/pf/go/683/#b">http://davesgarden.com/guides/pf/go/683/#b</a> (Accessed: 9 February 2016) 3. Garden Guides. <a href="http://www.gardenguides.com/109926-flowers-poisonous-cats.html">http://www.gardenguides.com/109926-flowers-poisonous-cats.html</a> (Accessed: 9 February 2016)</p>	<p>1. "Because the foliage of Autumn Clematis is toxic, it is not eaten by mammalian herbivores." 2. "Danger: All parts of plant are poisonous if ingested" 3. "All parts of the plant are toxic to cats and the effects range from mild to seizures and death, depending on how much the animal ingests." see above for contradictory information</p>
4.06	<p>1. 2013. Missouri Botanical Gardens. <i>Clematis terniflora</i>. <a href="http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a300">http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a300</a> [Accessed 04 Oct 2013] 2. Fine Gardening. <a href="http://www.finegardening.com/sweet-autumn-clematis-clematis-terniflora">http://www.finegardening.com/sweet-autumn-clematis-clematis-terniflora</a> (Accessed: 5 February 2016)</p>	<p>1. "Problems: No serious insect or disease problems. Spreading, sometimes hard-to-control vine" 2. "Problems: Wilt, powdery mildew, rust, fungal spots, and stem cankers are common. Scale insects, whiteflies, earwigs, aphids can occur."; No evidence that <i>clematis terniflora</i> is a significant primary or secondary host</p>
4.07	<p>1. 2011. HedgerowRose. Growing <i>Clematis terniflora</i> 'Paniculata' or Sweet Autumn Clematis. <a href="http://hedgerowrose.com/annuals-perennials/2011/09/30/growing-clematis-terniflora-paniculata-or-sweet-autumn-clematis/">http://hedgerowrose.com/annuals-perennials/2011/09/30/growing-clematis-terniflora-paniculata-or-sweet-autumn-clematis/</a> [Accessed 04 Oct 2013] 2. Dave's Garden. <a href="http://davesgarden.com/guides/pf/go/683/#b">http://davesgarden.com/guides/pf/go/683/#b</a> (Accessed: 9 February 2016)</p>	<p>1. "<i>Clematis terniflora</i> is poisonous if ingested and some have experienced skin irritation when handling the plant." 2. "Danger: All parts of plant are poisonous if ingested; Handling plant may cause skin irritation or allergic reaction"</p>
4.08	<p>1. 2008. Mahala, M.. Kentucky Terrestrial Nuisance Species Management Plan. Kentucky Department of Fish and Wildlife Resources, Frankfort, KY</p>	<p>1. "will establish in open or closed habitats if stem can reach light; High climber and can choke tree vegetation; will grow on ground in grassland; fire sets back does not kill, may promote germination; wind dispersed; will grow in open forest or woodland"; insufficient evidence</p>
4.09	<p>1. 2008. Meisenburg, M./Langeland, K./Vollmer, K.. Japanese clematis, <i>Clematis terniflora</i> (D.C.) Ranunculaceae. SS AGR 309. University of Florida, IFAS, Gainesville, FL 2. 2013. Missouri Botanical Gardens. <i>Clematis terniflora</i>. <a href="http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a300">http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a300</a> [Accessed 04 Oct 2013] 3. National Parks Service. <a href="http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm">http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm</a> (Accessed: 5 February 2016)</p>	<p>1. "In natural areas, Japanese clematis typically invades along roadsides and thickets, as well as along the edges of woods near creeks. It also grows well in the well shaded understory of forests." 2. "Unlike almost all other species of clematis, this plant will thrive and bloom well in considerable shade. Blooms on new growth." 3. "It prefers full sun but can tolerate partial shade."</p>
4.10	<p>1. 2007. Gartin, P.J.. Some Like It Hot: Flowers That Thrive in Hot Humid Weather. Gibbs Smith, Layton, Utah 2. Plants for a Future. <a href="http://www.pfaf.org/user/Plant.aspx?LatinName=Clematis+terniflora">http://www.pfaf.org/user/Plant.aspx?LatinName=Clematis+terniflora</a> (Accessed: 11 February 2016)</p>	<p>1. "Sweet autumn clematis is not choosy about soil type." 2. "Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils."; insufficient information</p>

4.11	<p>1. 2001. Wu, Z.Y./Raven,P.H./Hong, D.Y. (eds.). Flora of China. Vol. 6 (Caryophyllaceae through Lardizabalaceae). Science Press &amp; Missouri Botanical Garden Press, Beijing &amp; St. Louis 2. 2010. Global Invasive Species Database. Clematis terniflora. <a href="http://issg.org/database/species/ecology.asp?si=1224&amp;fr=1&amp;sts=">http://issg.org/database/species/ecology.asp?si=1224&amp;fr=1&amp;sts=</a> [Accessed 04 Oct 2013] 3. Floridata. <a href="http://floridata.com/Plants/Ranunculaceae/Clematis%20terniflora/933">http://floridata.com/Plants/Ranunculaceae/Clematis%20terniflora/933</a> (Accessed: 9 February 2016) 4. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. Invasive Plant Science and Management. 2(1): 70-73. 4. Floridata. <a href="http://floridata.com/Plants/Ranunculaceae/Clematis%20terniflora/933">http://floridata.com/Plants/Ranunculaceae/Clematis%20terniflora/933</a> (Accessed: 9 February 2016) 5. National Parks Service. <a href="http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm">http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm</a> (Accessed: 5 February 2016)</p>	<p>1. "Vines woody." 2. "Clematis terniflora is a perennial vine that is frequently used as a landscaping plant. It is invasive, however, and displays aggressive growth in many areas of North America. C. terniflora can climb nearly 10 metres high, smothering trees and pulling down telephone poles." 3. "sweet autumn clematis is a vigorous semi-evergreen (or deciduous) vine than can climb up to 30 ft (9.1 m) on a semiwoody main stem" 4. "Japanese clematis is a herbaceous to woody (older portions) vine that climbs over shrubs and into small trees" 5. "autumn clematis is a vigorous semi-evergreen (or deciduous) vine than can climb up to 30 ft (9.1 m) on a semiwoody main stem that can get up to 4 in (10 cm) in diameter. Branching smaller stems usually form a rampant tangle of growth that sprawls over every available structure." 6. "It grows vigorously over other vegetation, forming dense blankets that block sunlight to the plants underneath. "</p>
4.12		no evidence
5.01	<p>1. 2001. Wu, Z.Y./Raven,P.H./Hong, D.Y. (eds.). Flora of China. Vol. 6 (Caryophyllaceae through Lardizabalaceae). Science Press &amp; Missouri Botanical Garden Press, Beijing &amp; St. Louis 2. Go Botany. <a href="https://gobotany.newenglandwild.org/species/clematis/terniflora/">https://gobotany.newenglandwild.org/species/clematis/terniflora/</a> (Accessed: 9 February 2016)</p>	<p>1. "Forest margins, scrub on slopes, grassy areas on hills, among rocks in coastal areas; near sea level to 800 m." 2. "Habitat: terrestrial"</p>
5.02	<p>1. 2001. Wu, Z.Y./Raven,P.H./Hong, D.Y. (eds.). Flora of China. Vol. 6 (Caryophyllaceae through Lardizabalaceae). Science Press &amp; Missouri Botanical Garden Press, Beijing &amp; St. Louis 2. USDA Plants Database. <a href="http://plants.usda.gov/core/profile?symbol=CLTE4">http://plants.usda.gov/core/profile?symbol=CLTE4</a> (Accessed: 5 February 2016)</p>	<p>1. "Vines woody." [Ranunculaceae] 2. "Growth Habit: Vine"</p>
5.03	<p>1. 2001. Wu, Z.Y./Raven,P.H./Hong, D.Y. (eds.). Flora of China. Vol. 6 (Caryophyllaceae through Lardizabalaceae). Science Press &amp; Missouri Botanical Garden Press, Beijing &amp; St. Louis</p>	<p>1. "Vines woody." [Ranunculaceae]; No evidence of nitrogen fixation</p>
5.04	<p>1. 2001. Wu, Z.Y./Raven,P.H./Hong, D.Y. (eds.). Flora of China. Vol. 6 (Caryophyllaceae through Lardizabalaceae). Science Press &amp; Missouri Botanical Garden Press, Beijing &amp; St. Louis 2. Floridata. <a href="http://floridata.com/Plants/Ranunculaceae/Clematis%20terniflora/933">http://floridata.com/Plants/Ranunculaceae/Clematis%20terniflora/933</a> (Accessed: 7 February 2016) 3. Center for Invasive Species and Ecosystem Health. <a href="http://www.invasive.org/browse/subinfo.cfm?sub=5354">http://www.invasive.org/browse/subinfo.cfm?sub=5354</a> (Accessed: 7 February 2016)</p>	<p>1. "Vines woody." [Ranunculaceae] 2&amp;3. No evidence of these specialized structures in the description of the plant.</p>
6.01		No evidence
6.02	<p>1. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. Invasive Plant Science and Management. 2(1): 70-73. 2. 2013. Floridata. Clematis terniflora. <a href="http://www.floridata.com/ref/c/clem_ter.cfm">http://www.floridata.com/ref/c/clem_ter.cfm</a> [Accessed 06 Oct 2013] 3. National Parks Service. <a href="http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm">http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm</a> (Accessed: 5 February 2016)</p>	<p>1. "Seeds are small and brown with a white feathery plume. Mature seeds can germinate anywhere between 1 to 9 mo after maturing." 2. "Sweet autumn clematis is probably the easiest clematis to grow. It thrives on neglect and can even become a nuisance, engulfing less robust plants and self-seeding itself all over the place." 3. "Spreads: by wind-dispersed seed."</p>
6.03	<p>1. 2006. Do, K.F.. A Determination of Phylogeny and Hybridization History Within Clematis L.(Ranunculaceae) Using Actin and Nitrate Reductase Intron Sequences. PhD Dissertation. University of South Florida, Tampa, FL</p>	<p>1. "Clematis is a common garden ornamental, which gives this genus scientific and economic importance. One of the reasons that Clematis is such a popular garden plant is the relative ease of hybridization within the genus, especially between closely related species."; No evidence of natural hybridization of Clematis terniflora</p>

6.04	<p>1. 2010. Jiang, N./Yu, W.B./Li, H.Z./Guan, K.Y.. Floral traits, pollination ecology and breeding system of three Clematis species (Ranunculaceae) in Yunnan province, southwestern China. Australian Journal of Botany. 58(2): 115-123. 2. 2013. Missouri Botanical Gardens. Clematis terniflora. <a href="http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a300">http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a300</a> [Accessed 04 Oct 2013] 3. Fine Gardening. <a href="http://www.finegardening.com/sweet-autumn-clematis-clematis-terniflora">http://www.finegardening.com/sweet-autumn-clematis-clematis-terniflora</a> (Accessed: 5 February 2016)</p>	<p>1. "The two hand-pollination treatments indicated that all three Clematis species were self-compatible. The autonomous selfing indices of <i>C. chrysocoma</i>, <i>C. akebioides</i> and <i>C. rehderiana</i> were 0.29, 0.97 and 0.80 for fruit-set, respectively, and 0.23, 0.76 and 0.84 for seed production, respectively." 2. "Sweet autumn clematis can aggressively self seed in the landscape, and has escaped cultivation and naturalized in many parts of the U.S." 3. "Can self-seed invasively"</p>
6.05	<p>1. 2013. Plants for a Future Database. Clematis terniflora. <a href="http://www.pfaf.org/user/Plant.aspx?LatinName=Clematis+terniflora">http://www.pfaf.org/user/Plant.aspx?LatinName=Clematis+terniflora</a> [Accessed 04 Oct 2013]</p>	<p>1. "The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, flies."</p>
6.06	<p>1. 2013. Floridata. Clematis terniflora. <a href="http://www.floridata.com/ref/c/clem_ter.cfm">http://www.floridata.com/ref/c/clem_ter.cfm</a> [Accessed 06 Oct 2013] 2. Fine Gardening. <a href="http://www.finegardening.com/sweet-autumn-clematis-clematis-terniflora">http://www.finegardening.com/sweet-autumn-clematis-clematis-terniflora</a> (Accessed: 9 February 2016) 3. Dave's Garden. <a href="http://davesgarden.com/guides/pf/go/683/#b">http://davesgarden.com/guides/pf/go/683/#b</a> (Accessed: 9 February 2016) 4. Global Invasive Species Database. <a href="http://www.issg.org/database/species/ecology.asp?si=1224&amp;fr=1&amp;sts=sss&amp;lang=EN">http://www.issg.org/database/species/ecology.asp?si=1224&amp;fr=1&amp;sts=sss&amp;lang=EN</a> (Accessed: 9 February 2016)</p>	<p>1. "Sweet autumn clematis can be grown from seed; plant as soon as ripe. It also can be started from cuttings taken in early summer, and by layering in late winter or early spring. " 2. "Growth Habit: Spreads" 3. Seven Gardeners' Notes attesting to how freely this plant spreads 4. "Clematis terniflora reproduces both vegetatively and by seed." Insufficient evidence for a yes</p>
6.07	<p>1. 2013. Shoot Gardening. Clematis terniflora (Sweet autumn clematis). <a href="http://www.shootgardening.co.uk/plant/clematis-terniflora">http://www.shootgardening.co.uk/plant/clematis-terniflora</a> [Accessed 06 Oct 2013]</p>	<p>1. "2-5 years To maturity"</p>
7.01	<p>1. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. Invasive Plant Science and Management. 2(1): 70-73.</p>	<p>1. "It is found along roadsides, thickets, and other secondary sites, and along edges of woods near creeks."; insufficient evidence</p>
7.02	<p>1. National Parks Service. <a href="http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm">http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm</a> (Accessed: 22 January 2016) 2. 2010. Global Invasive Species Database. Clematis terniflora. <a href="http://issg.org/database/species/ecology.asp?si=1224&amp;fr=1&amp;sts=">http://issg.org/database/species/ecology.asp?si=1224&amp;fr=1&amp;sts=</a> [Accessed 04 Oct 2013] 3. White Flower Farm. <a href="http://www.whiteflowerfarm.com/26630-product.html">http://www.whiteflowerfarm.com/26630-product.html</a> (Accessed: 9 February 2016)</p>	<p>1. "was introduced into the United States as an ornamental vine and is still widely sold in the nursery trade." 2. "Clematis terniflora is used as a landscape ornamental, although its popularity is decreasing as landscapers realize its invasive potential. " 3. Can be purchased online</p>
7.03	<p>1. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. Invasive Plant Science and Management. 2(1): 70-73.</p>	<p>1. "Long-distance dispersal of the plant might result from movement of seeds in mulch provided by the city to homeowners in a yard waste mulching program (E. Smith, personal communication 2005)." ... "Although Japanese clematis was introduced into the United States over 100 yr ago, its increased recent proliferation in Gainesville, FL should be heeded as a warning of its potential invasiveness, especially if dispersal is aided by anthropogenic activities such as distribution of contaminated mulch." LIKELY</p>
7.04	<p>1. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. Invasive Plant Science and Management. 2(1): 70-73. 2. 2013. Dave's Garden. PlantFiles: Sweet Autumn Clematis, Sweet Autumn Virgin's Bower, Japanese Clematis - Clematis terniflora. <a href="http://davesgarden.com/guides/pf/go/683/">http://davesgarden.com/guides/pf/go/683/</a> [Accessed 04 Oct 2013] 3. National Parks Service. <a href="http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm">http://www.nps.gov/plants/alien/pubs/midatlantic/clte.htm</a> (Accessed: 5 February 2016)</p>	<p>1. "Seeds are small and brown with a white feathery plume." ... "Although the plant is a prolific seed producer and seed is probably dispersed by wind, the rather short-winged appendages and fairly large seed size suggest that most seeds are probably not dispersed far from the parents. This might explain why the plant is very abundant where it occurs." 2. "On Oct 1, 2007, claypa from West Pottsgrove, PA (Zone 6b) wrote: I find this plant growing in protected wetlands in Maryland, roadsides, hedgerows, fences... Yet another non-native invasive, causing ecological damage to our countryside, for some "fragrance". Kudzu is fragrant, too. It spreads by seeds, and the wind blows the seeds far and wide, so unless you deadhead every flower, "containing" this plant is a fantasy." 3. "Spreads: by wind-dispersed seed."</p>
7.05	<p>1. 2012. Kaufman, S.R./Kaufman, W.. Invasive Plants: A Guide to Identification and the Impacts and Control of Common North American Species. Second Edition, Revised and Updated. Stackpole Books, Mechanicsburg, PA</p>	<p>1. "Found along stream banks and in thickets and moist woods from New England south to Florida, and west to Nebraska and Texas." [Although adapted for wind dispersal, occurrence along streams may facilitate spread]</p>



7.06		No evidence
7.07	1. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. <i>Invasive Plant Science and Management</i> . 2(1): 70-73.	1. "Seeds are small and brown with a white feathery plume." [Adapted for wind dispersal, although plumes could possibly get caught in fur or feathers and be occasionally dispersed by animals]
7.08		Unknown, but unlikely considering the plant is unpalatable to grazers and toxic to some animals.
8.01	1. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. <i>Invasive Plant Science and Management</i> . 2(1): 70-73. 2. Extension. <a href="http://articles.extension.org/pages/67316/clematis-terniflora-sweet-autumn-virginibower">http://articles.extension.org/pages/67316/clematis-terniflora-sweet-autumn-virginibower</a> (Accessed: 11 February 2016) 3. University of Florida IFAS Extension. <a href="http://ufdcimages.uflib.ufl.edu/IR/00/00/41/84/00001/AG31500.pdf">http://ufdcimages.uflib.ufl.edu/IR/00/00/41/84/00001/AG31500.pdf</a> (Accessed: 11 February 2016)	1. "Although the plant is a prolific seed producer and seed is probably dispersed by wind, the rather short-winged appendages and fairly large seed size suggest that most seeds are probably not dispersed far from the parents." 2. "Seeds are also showy, and production is prolific." 3. "This invasive plant is a prolific seed producer, and the short-winged appendages and fairly large seed mean most seeds are probably not dispersed far."
8.02	1. 2008. Royal Botanic Gardens Kew. Seed Information Database (SID). Version 7.1. <a href="http://data.kew.org/sid/">http://data.kew.org/sid/</a> 2. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. <i>Invasive Plant Science and Management</i> . 2(1): 70-73.	1. Unknown for <i>C. terniflora</i> . Several <i>Clematis</i> species have orthodox seeds] 2. "Mature seeds can germinate anywhere between 1 to 9 mo after maturing."
8.03	1. 2009. Langeland, K./Meisenburg, M.. Herbicide Evaluation to Control Clematis terniflora Invading Natural Areas in Gainesville, Florida. <i>Invasive Plant Science and Management</i> . 2(1): 70-73.	1. "Japanese clematis, a herbaceous to woody vine native to Asia, has been widely used for landscaping in the southeastern United States and is now a naturalized and invasive in Florida. Herbicides that contain the active ingredients fluroxypyr, glyphosate, imazapic, metsulfuron, or triclopyr, applied alone or in combination on a sprayto- wet basis, were evaluated for their effectiveness to control the plant in a natural area of Gainesville, FL. All herbicide treatments provided some level of control 30, 60, and 90 d after application. The most effective herbicide treatments, imazapic 0.6 g ae/L, glyphosate as low as 3.6 g ae/L, triclopyr as low as 3.6 g ae/L, metsulfuron 0.07 g ai/L, and fluroxypyr as low as 1.8 g ae/L, resulted in 72% to 99% control 90 d after application, but were not significantly different from each other. Natural area managers throughout the range of Japanese clematis should be vigilant for this species and remove it whenever encountered. Our results indicate that it can be controlled by foliar application of several herbicides commonly used for management of pest plants in natural areas, but repeat applications will be necessary."
8.04	1. 2008. Meisenburg, M./Langeland, K./Vollmer, K.. Japanese clematis, <i>Clematis terniflora</i> (D.C.) Ranunculaceae. SS AGR 309. University of Florida, IFAS, Gainesville, FL 2. 2013. Dave's Garden. PlantFiles: Sweet Autumn Clematis, Sweet Autumn Virgin's Bower, Japanese Clematis - <i>Clematis terniflora</i> . <a href="http://davesgarden.com/guides/pf/go/683/">http://davesgarden.com/guides/pf/go/683/</a> [Accessed 04 Oct 2013] 3. 2013. Floridata. <i>Clematis terniflora</i> . <a href="http://www.floridata.com/ref/c/clem_ter.cfm">http://www.floridata.com/ref/c/clem_ter.cfm</a> [Accessed 06 Oct 2013] 4. Fine Gardening. <a href="http://www.finegardening.com/pruning-clematis">http://www.finegardening.com/pruning-clematis</a> (Accessed: 11 February 2016)	1. "Mechanical. Seedlings may be hand-pulled or mowed. Mature plants can be cut by hand or mowed. Plants must be cut back enough and dug up to ensure complete removal." [Suggests that without complete removal, plants will resprout from the roots] 2. "If you pull them, they break off at the ground, then grow right back." 3. "All climbing clematis vines should be pruned hard after the first year of growth to encourage branching and bushiness. Cut back to a pair of strong buds about a foot above ground level." 4. "If left unpruned, clematis vines become overloaded with decrepit stems that produce few flowers. By the same token, more vigorous species and varieties that are left unchecked bear most of the flowers high atop the plants and run the risk of tearing down their supporting structure or pulling themselves down under their own weight. Pruning clematis vines stimulates new growth, which increases the number of flowers, encourages flowers at a level where you can best enjoy them, and takes weight off the plant to keep it from toppling over."
8.05	1. 2008. Meisenburg, M./Langeland, K./Vollmer, K.. Japanese clematis, <i>Clematis terniflora</i> (D.C.) Ranunculaceae. SS AGR 309. University of Florida, IFAS, Gainesville, FL	1. "Biological. To date no biological control exists for this species. However, leaf damage is occasionally observed (Figure 2) perhaps because Japanese clematis shares its range with several native <i>Clematis</i> "