

Note: This genus is prohibited in Florida

Assessment date 11 July 2017

<i>Cuscuta japonica</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	y	2
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	unk	0
4.03	Parasitic	y	1
4.04	Unpalatable to grazing animals	unk	-1
4.05	Toxic to animals	unk	0
4.06	Host for recognised pests and pathogens	unk	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.	unk	0
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	n	-1
6.05	Requires specialist pollinators	unk	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)	y	1
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	y	1
7.04	Propagules adapted to wind dispersal	unk	-1
7.05	Propagules water dispersed	y	1
7.06	Propagules bird dispersed	unk	-1
7.07	Propagules dispersed by other animals (externally)	y	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)	y	1
8.03	Well controlled by herbicides	n	1
8.04	Tolerates, or benefits from, mutilation or cultivation	y	1
8.05		?	
Total Score			7
Implemented Pacific Second Screening			NO
Risk Assessment Results			High

section	# questions answered	satisfy minimum?
A		11 yes
B		4 yes
C		17 yes
total		32 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	<p>1. Global Plant Hardiness Zones for Phytosanitary Risk Analysis. http://naldc.nal.usda.gov/download/36586/PDF (Accessed: 17 May 2017) 2. US National Plant Germplasm System. https://npgsweb.ars-grin.gov/gringlobal/taxonomydetail.aspx?402563 (Accessed: 17 May 2017) 3. Flora of China. http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=20018817 (Accessed: 17 May 2017) 4. Global Biodiversity Information Facility. http://www.gbif.org/species/2927548 (Accessed: 17 May 2017) 5. NPAG Data: Cuscuta Japonica. https://www.invasive.org/eastern/other/DicCusCjO01.pdf (Accessed: 17 May 2017)</p>	<p>1. Figure 3. Florida North Zone: Hardiness zones 8 and 9. Central Zone: Hardiness zones 9 and 10. South Zone: Hardiness zone 10. 2. Native to China, Japan, Korea, Taiwan, and Vietnam 3. Native to China, Japan, Korea, Vietnam, and Russia. 4. See distribution map. 5. Asian range is China (Taiwan, Hong Kong, Manchuria), Japan, Korea, and Russia (Amur and E. Siberia).</p>
2.02		Native range is well known.
2.03	<p>1. The University of Melbourne. Köppen-Geiger Climate Map of the World. http://people.eng.unimelb.edu.au/mpeel/koppen.html (Accessed: 17 May 2017) 2. US National Plant Germplasm System. https://npgsweb.ars-grin.gov/gringlobal/taxonomydetail.aspx?402563 (Accessed: 17 May 2017) 3. Flora of China. http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=200018817 (Accessed: 17 May 2017) 4. Global Biodiversity Information Facility. http://www.gbif.org/species/2927548 (Accessed: 17 May 2017) 5. NPAG Data: Cuscuta Japonica. https://www.invasive.org/eastern/other/DicCusCjO01.pdf (Accessed: 17 May 2017)</p>	<p>1. Native to Köppen-Geiger Climate Zones: Am, Aw, BWk, BSh, Cwa, Cwb, Cfa, Cfb, Dwa, Dwb, Dwc, Dfa, and Dfb. 2. Native to China, Japan, Korea, Taiwan, and Vietnam 3. Native to China, Japan, Korea, Vietnam, and Russia. 4. See distribution map. 5. Asian range is China (Taiwan, Hong Kong, Manchuria), Japan, Korea, and Russia (Amur and E. Siberia).</p>
2.04	<p>1. Climate Charts. World Climate Maps. http://www.climate-charts.com/World-Climate-Maps.html#rain (Accessed: 17 May 2017) 2. US National Plant Germplasm System. https://npgsweb.ars-grin.gov/gringlobal/taxonomydetail.aspx?402563 (Accessed: 17 May 2017) 3. Flora of China. http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=200018817 (Accessed: 17 May 2017) 4. Global Biodiversity Information Facility. http://www.gbif.org/species/2927548 (Accessed: 17 May 2017) 5. NPAG Data: Cuscuta Japonica. https://www.invasive.org/eastern/other/DicCusCjO01.pdf (Accessed: 17 May 2017)</p>	<p>1. Native to areas with rainfall within these ranges. 2. Native to China, Japan, Korea, Taiwan, and Vietnam 3. Native to China, Japan, Korea, Vietnam, and Russia. 4. See distribution map. 5. Asian range is China (Taiwan, Hong Kong, Manchuria), Japan, Korea, and Russia (Amur and E. Siberia).</p>
2.05	<p>1. US National Plant Germplasm System. https://npgsweb.ars-grin.gov/gringlobal/taxonomydetail.aspx?402563 (Accessed: 17 May 2017) 2. Texas Invasives. http://www.texasinvasives.org/plant_database/detail.php?symbol=cuja (Accessed: 17 May 2017) 3. Invasive Plant Atlas of the United States. https://www.invasiveplantatlas.org/subject.html?sub=5446 (Accessed: 17 May 2017) 4. USDA Plants Database. https://plants.usda.gov/core/profile?symbol=CUJA (Accessed: 17 May 2017)</p>	<p>1. Naturalized in Texas, Florida, South Carolina, and California 2. Introduced to the US. Currently present in Florida, South Carolina, and Texas. 3. Recently introduced to the US. 4. Introduced to Florida, Texas, and South Carolina.</p>

3.01	1. US National Plant Germplasm System. https://npgsweb.ars-grin.gov/gringlobal/taxonomydetail.aspx?402563 (Accessed: 17 May 2017)	1. Naturalized in Texas, Florida, South Carolina, and California
3.02	1. A Geographical Atlas of World Weeds. Holm, et al. Krieger Publishing Company. Malabar, FL. 1991. 2. Global Compendium of Weeds. http://www.hear.org/gcw/species/cuscuta_japonica/ (Accessed: 18 May 2017) 3. Florida Natural Areas Inventory. http://fnai.org/Invasives/Cuscuta_japonica_FNAI.pdf (Accessed: 18 May 2017)	1. Present as a weed in China, France, and Japan. 2. Weed 3. "Habitat: Disturbed sites"
3.03	1. Global Compendium of Weeds. http://www.hear.org/gcw/species/cuscuta_japonica/ (Accessed: 18 May 2017) 2. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017) 3. Texas Invasive Species Institute. http://www.tsusinvasives.org/home/database/cuscuta-japonica (Accessed: 18 May 2017)	1. Agricultural weed, noxious weed 2. "Japanese dodder is a very aggressive parasitic plant that affects ornamental plantings and agricultural crops as well as having the potential to severely alter the composition and function of riparian areas. This parasite threatens native vegetation by killing host seedlings or by making host trees more susceptible to disease. Poses a threat to crops such as alfalfa, asparagus, and tomatoes, in addition to horticultural plants. Also serves as a host for several viruses known to be detrimental to agricultural crops." 3. "The threat of this plant is apparent because it is a parasitic vine and can kill its host in 2 to 3 years. As mention in the host plant section it is capable of destroying crops making it a serious threat to the horticultural and agricultural industries. It can also thrive in riparian zones, killing off native plants, which can severely alter the food chains and eliminates shade and nesting habitats. Although tall trees may be resistant to the Japanese dodder, the understory is more susceptible. Also, maintenance costs of both private and public landscapes would increase as infested plants are removed and replaced. Finally, the Japanese is host for several serious citrus viruses that can be transmitted to orchard crops."
3.04	1. Global Compendium of Weeds. http://www.hear.org/gcw/species/cuscuta_japonica/ (Accessed: 18 May 2017) 2. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017) 3. Texas Invasive Species Institute. http://www.tsusinvasives.org/home/database/cuscuta-japonica (Accessed: 18 May 2017)	1. Noxious weed 2. "Western states listed as Noxious Weed: Arizona, California. Also on the Federal Noxious Weed list"; "Japanese dodder is a very aggressive parasitic plant that affects ornamental plantings and agricultural crops as well as having the potential to severely alter the composition and function of riparian areas. This parasite threatens native vegetation by killing host seedlings or by making host trees more susceptible to disease." 3. "The threat of this plant is apparent because it is a parasitic vine and can kill its host in 2 to 3 years. As mention in the host plant section it is capable of destroying crops making it a serious threat to the horticultural and agricultural industries. It can also thrive in riparian zones, killing off native plants, which can severely alter the food chains and eliminates shade and nesting habitats. Although tall trees may be resistant to the Japanese dodder, the understory is more susceptible. Also, maintenance costs of both private and public landscapes would increase as infested plants are removed and replaced. Finally, the Japanese is host for several serious citrus viruses that can be transmitted to orchard crops."

3.05	<p>1. Global Compendium of Weeds. http://www.hear.org/gcw/scientificnames/scinamec.htm (Accessed: 18 May 2017) 2. BioNET-EAFRINET. http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Cuscuta_campestris_(Golden_Dodder).htm (Accessed: 18 May 2017) 3. Invasive Species South Africa. http://www.invasives.org.za/legislation/item/380-fringed-dodder-cuscuta-suaveolens (Accessed: 18 May 2017)</p>	<p>1. <i>Cuscuta approximata</i>, <i>Cuscuta campestris</i>, <i>Cuscuta indecora</i>, <i>Cuscuta planiflora</i>, <i>Cuscuta reflexa</i>, and <i>Cuscuta suaveolens</i> are classified as noxious weeds. 2. "<i>Cuscuta campestris</i> is a parasite of a wide range of herbaceous plants. It can be a serious weed when broad leaved crops are grown as perennials (e.g. lucerne, clovers, citrus and sugar beet). It causes damage by absorbing food material from the host plant. The dense mat of stems it produces can also entangle the host and cause shading of the ground vegetation layer. <i>C. campestris</i> has been listed as a noxious weed in South Africa (prohibited plants that must be controlled. They serve no economic purpose and possess characteristics that are harmful to humans, animals or the environment), Hawaii and most Australian states." 3. "Fringed dodder smothers and parasitises other plants; of economic importance in agricultural croplands, particularly lucerne."</p>
4.01	<p>1. CABI Invasive Species Compendium. http://www.cabi.org/isc/datasheet/17116 (Accessed: 18 May 2017) 2. County of Santa Barbara. http://cosb.countyofsb.org/agcomm/wma.aspx?id=29344 (Accessed: 18 May 2017) 3. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017)</p>	<p>No evidence of these characteristics</p>
4.02	<p>1. Qiuling, et al. Ecology and Environment. 2008-01. http://en.cnki.com.cn/Article_en/CJFDTOTAL-TRYJ200801063.htm (Accessed: 18 May 2017)</p>	<p>1. Aqueous extracts have an allelopathic effect</p>
4.03	<p>1. County of Santa Barbara. http://cosb.countyofsb.org/agcomm/wma.aspx?id=29344 (Accessed: 18 May 2017) 2. Texas Invasives. http://www.texasinvasives.org/plant_database/detail.php?symbol=cuja (Accessed: 18 May 2017) 3. Texas Invasive Species Institute. http://www.tsusinvasives.org/home/database/cuscuta-japonica (Accessed: 18 May 2017)</p>	<p>1. "Japanese dodder, <i>Cuscuta japonica</i>, is an aggressive non-native parasitic plant that has the ability to kill its host by robbing the host of food and water. Japanese dodder is able to infect a broad range of plant types, including oak, willow, ivy, blackberry, plum, citrus, stone fruits, apple, laurel, clematis, fennel, coyote brush, and other woody and herbaceous plants, commercial crops, ornamentals, and wild plants." 2. Parasitic 3. Parasitic</p>
4.04	<p>1. Vetary. https://www.vetary.com/horse/condition/dodder-poisoning (Accessed: 18 May 2017) 2. Floridata. http://floridata.com/Plants/Convolvulaceae/Cupressocyparis%20Leylandii/762 (Accessed: 18 May 2017)</p>	<p>1. "Dodder, also referred to as strangleweed, is a parasitic-type plant that feeds on other plants, such as clovers and alfalfa. Not only can it destroy a field of alfalfa, but when ingested, dodder can cause problems in your horse's digestive and nervous systems, resulting in weight loss, abdominal pain, unusual behavior, and significant brain damage that can be fatal."; "While dodder can be consumed in fields and pastures, it is often rolled into hay bales. Poisoning from contaminated hay is usually seen after ingestion has taken place over several weeks. Symptoms are more often seen when dodder makes up about half of the hay in the bale." 2. "Although dodder is not thought of as a poisonous plant, cows and horses have shown colicky symptoms after eating it."</p>
4.05	<p>1. Vetary. https://www.vetary.com/horse/condition/dodder-poisoning (Accessed: 18 May 2017) 2. Floridata. http://floridata.com/Plants/Convolvulaceae/Cupressocyparis%20Leylandii/762 (Accessed: 18 May 2017)</p>	<p>1. "Dodder, also referred to as strangleweed, is a parasitic-type plant that feeds on other plants, such as clovers and alfalfa. Not only can it destroy a field of alfalfa, but when ingested, dodder can cause problems in your horse's digestive and nervous systems, resulting in weight loss, abdominal pain, unusual behavior, and significant brain damage that can be fatal." 2. "Although dodder is not thought of as a poisonous plant, cows and horses have shown colicky symptoms after eating it."</p>

4.06	<p>1. County of Santa Barbara. http://cosb.countyofsb.org/agcomm/wma.aspx?id=29344 (Accessed: 18 May 2017) 2. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017) 3. Zhang, X. C. et al. 1991. Studies on the infection of MLO of jujube witches'-broom disease to periwinkle, <i>Vinca rosea</i>. International Journal of Tropical Plant Diseases 9(2):251-256 (Accessed: 18 May 2017)</p>	<p>1."Japanese dodder is able to spread plant diseases like tristeza, citrus greening and other phytoplasma organisms." 2. "Also serves as a host for several viruses known to be detrimental to agricultural crops." 3. Has been used to transfer plant pathogens from one host to another</p>
4.07	<p>1. The Quiet Invasion: A Guide to Invasive Species of the Galveston Bay Area. http://www.galvbayinvasives.org/www.galvbayinvasives.org/Guide/Species/CuscutaJaponica.html (Accessed: 18 May 2017) 2. Foraging Texas. http://www.foragingtexas.com/2007/09/dodder.html (Accessed: 18 May 2017)</p>	<p>1. "This species is not known to be toxic." 2. "Because dodder absorbs many chemicals from its host plants, it itself can become toxic."</p>
4.08		No evidence
4.09	<p>1. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017)</p>	<p>1. "semi-shade or no shade"</p>
4.10	<p>1. Texas Invasives. http://www.texasinvasives.org/plant_database/detail.php?symbol=cuja (Accessed: 18 May 2017)</p>	<p>Insufficient evidence 1. "Grows very rapidly, up to 6 inches/day. As a parasitic vine that penetrates the vascular tissue of its host for water and nutrients, it reattaches to the host plant as it grows. Once established, its connection to the soil terminates."</p>
4.11	<p>1. County of Santa Barbara. http://cosb.countyofsb.org/agcomm/wma.aspx?id=29344 (Accessed: 18 May 2017) 2. USDA Plants Database. https://plants.usda.gov/core/profile?symbol=CUJA (Accessed: 18 May 2017) 3. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017)</p>	<p>1. See photos. "Japanese dodder looks like a tangled, yellow-to-orange mass of spaghetti on a host plant." 2. "Growth Habit: Forb/Herb, Vine" 3. "Japanese dodder has thick, spaghetti-like, robust stems in contrast to native dodder stems, which are usually more thread or string-like. Infestations are often large, spreading, and web- like, covering large shrubs and small trees. In contrast, infestations of other dodder species are likely to be smaller, infecting non-woody plants or small shrubs."</p>
4.12		No evidence
5.01	<p>1. CABI Invasive Species Compendium. http://www.cabi.org/isc/datasheet/17116 (Accessed: 18 May 2017) 2. Texas Nonnatives. http://www.texasnonnatives.org/M7texSESW.htm (Accessed: 18 May 2017)</p>	<p>1. Terrestrial 2. Terrestrial</p>
5.02	<p>1. USDA Plants Database. https://plants.usda.gov/core/profile?symbol=CUJA (Accessed: 18 May 2017) 2. Florida Natural Areas Inventory. http://fnai.org/Invasives/Cuscuta_japonica_FNAI.pdf (Accessed: 18 May 2017)</p>	<p>1. "Growth Habit: Forb/Herb, Vine" 2. "Growth Habit: Parasitic vine"</p>
5.03	<p>1. CABI Invasive Species Compendium. http://www.cabi.org/isc/datasheet/17116 (Accessed: 18 May 2017)</p>	<p>1. Herbaceous</p>

5.04	<p>1. CABI Invasive Species Compendium. http://www.cabi.org/isc/datasheet/17116 (Accessed: 18 May 2017)</p> <p>2. County of Santa Barbara. http://cosb.countyofsb.org/agcomm/wma.aspx?id=29344 (Accessed: 18 May 2017)</p> <p>3. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017)</p>	No evidence of these specialized structures
6.01		No evidence
6.02	<p>1. Florida Natural Areas Inventory. http://fnai.org/Invasives/Cuscuta_japonica_FNAI.pdf (Accessed: 18 May 2017)</p> <p>2. Farmer Fred. http://www.farmerfred.com/dodder.htm (Accessed: 18 May 2017)</p> <p>3. Texas Invasive Species Institute. http://www.tsusinvasives.org/home/database/cuscuta-japonica (Accessed: 18 May 2017)</p>	<p>1. "Dispersed by seed (water, soil disturbance, machinery) and vegetatively through stem fragmentation." 2. "The Japanese dodder is a non-native aggressive species that is spread by seed and vegetatively, and can quickly move to other host plants." 3. "The Japanese dodder reproduces by seeds (up to 2,000/plant) that can be carried over long distances by moving water, machinery or soil disturbances like erosion."</p>
6.03		No evidence
6.04	<p>1. Tidwell T, 2008. Japanese dodder, a new phanerogamic pathogen in California. NPDN News (National Plant Diagnostic Network), 3(6):7-10. (Accessed: 18 May 2017)</p>	1. Self sterile
6.05	<p>1. Schaffner G, 1980. Extrafloral nectaries of Cuscuta. (Extraflorale Nektarien bei Cuscuta.) Berichte der Deutschen Botanischen Gesellschaft, 92(2/3):721-729. (Accessed: 18 May 2017)</p>	1. Insect pollination
6.06	<p>1. Florida Natural Areas Inventory. http://fnai.org/Invasives/Cuscuta_japonica_FNAI.pdf (Accessed: 18 May 2017)</p> <p>2. Farmer Fred. http://www.farmerfred.com/dodder.htm (Accessed: 18 May 2017)</p> <p>3. Texas Invasive Species Institute. http://www.tsusinvasives.org/home/database/cuscuta-japonica (Accessed: 18 May 2017)</p>	<p>1. "Dispersed by seed (water, soil disturbance, machinery) and vegetatively through stem fragmentation." 2. "The Japanese dodder is a non-native aggressive species that is spread by seed and vegetatively, and can quickly move to other host plants." 3. "The Japanese dodder can also reproduce vegetatively by stem fragments, and those stems can grow inches in a day."</p>
6.07	<p>1. Texas Invasives. http://www.texasinvasives.org/plant_database/detail.php?symbol=cuja (Accessed: 18 May 2017)</p>	<p>Insufficient evidence 1. "Grows very rapidly, up to 6 inches/day. As a parasitic vine that penetrates the vascular tissue of its host for water and nutrients, it reattaches to the host plant as it grows. Once established, its connection to the soil terminates."</p>
7.01	<p>1. County of Santa Barbara. http://cosb.countyofsb.org/agcomm/wma.aspx?id=29344 (Accessed: 18 May 2017)</p> <p>2. Florida Natural Areas Inventory. http://fnai.org/Invasives/Cuscuta_japonica_FNAI.pdf (Accessed: 18 May 2017)</p> <p>3. Farmer Fred. http://www.farmerfred.com/dodder.htm (Accessed: 18 May 2017)</p>	<p>1. "Japanese dodder can be spread by improper disposal of infested plant materials, by intentional plantings, by composting, or by birds or other animals who use the dodder for nesting material." 2. "Dispersed by seed (water, soil disturbance, machinery) and vegetatively through stem fragmentation." 3. "The use of dodder-free planting seed has long been a primary means of preventing the spread of dodder infestations. Many countries and states have seed laws that prohibit the presence of dodder seed in planting seed. Clean and inspect clothing and equipment before moving from infested to "clean" areas."</p>

7.02	<p>1. County of Santa Barbara. http://cosb.countyofsb.org/agcomm/wma.aspx?id=29344 (Accessed: 18 May 2017) 2. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017) 3. Farmer Fred. http://www.farmerfred.com/dodder.htm (Accessed: 18 May 2017)</p>	<p>1. "Japanese dodder can be spread by improper disposal of infested plant materials, by intentional plantings, by composting, or by birds or other animals who use the dodder for nesting material." 2. "Native to Asia and may have been intentionally, though illegally, introduced into the United States as a culturally important aphrodisiac."; "It is thought that humans are the main dispersal agents, as the plants are intentionally moved around from one cultivated source to another." 3. "It is not yet known how the Sacramento County infestations occurred, however it is suspected seeds, which purportedly have medicinal properties in Asian cultures, may have been imported illegally and inadvertently spread."</p>
7.03	<p>1. NPAG Data: Cuscuta Japonica. https://www.invasive.org/eastern/other/DicCusCjO01.pdf (Accessed: 18 May 2017) 2. Farmer Fred. http://www.farmerfred.com/dodder.htm (Accessed: 18 May 2017)</p>	<p>1. "Seeds of Cuscuta species are commonly intercepted contaminants of commercial seed shipments entering the United States. Currently, any seed shipment found to contain seed of any dodder is denied entry and the commodity is either devitalized or returned to the country of origin." 2. "Dodder seed may also be transported in infested plant material or be present as a contaminant in crop seed."; "The use of dodder-free planting seed has long been a primary means of preventing the spread of dodder infestations. Many countries and states have seed laws that prohibit the presence of dodder seed in planting seed. Clean and inspect clothing and equipment before moving from infested to "clean" areas."</p>
7.04	<p>1. Center for Invasive Species and Ecosystem Health. https://www.invasive.org/browse/detail.cfm?imgnum=5376412 (Accessed: 18 May 2017)</p>	<p>1. See photos. No evidence of adaptation for wind dispersal.</p>
7.05	<p>1. Florida Natural Areas Inventory. http://fnai.org/Invasives/Cuscuta_japonica_FNAI.pdf (Accessed: 18 May 2017) 2. Texas Invasive Species Institute. http://www.tsusinvasives.org/home/database/cuscuta-japonica (Accessed: 18 May 2017)</p>	<p>1. "Dispersed by seed (water, soil disturbance, machinery) and vegetatively through stem fragmentation." 2. "The Japanese dodder reproduces by seeds (up to 2,000/plant) that can be carried over long distances by moving water, machinery or soil disturbances like erosion."</p>
7.06		<p>No evidence</p>
7.07	<p>1. County of Santa Barbara. http://cosb.countyofsb.org/agcomm/wma.aspx?id=29344 (Accessed: 18 May 2017)</p>	<p>1. "Japanese dodder can be spread by improper disposal of infested plant materials, by intentional plantings, by composting, or by birds or other animals who use the dodder for nesting material."</p>
7.08		<p>No evidence</p>
8.01	<p>1. Farmer Fred. http://www.farmerfred.com/dodder.htm (Accessed: 18 May 2017) 2. Texas Invasive Species Institute. http://www.tsusinvasives.org/home/database/cuscuta-japonica (Accessed: 18 May 2017)</p>	<p>1. "Dodder is a prolific seed producer; each plant is capable of producing several thousand seeds." 2. "The Japanese dodder reproduces by seeds (up to 2,000/plant) that can be carried over long distances by moving water, machinery or soil disturbances like erosion."</p>
8.02	<p>1. Farmer Fred. http://www.farmerfred.com/dodder.htm (Accessed: 18 May 2017) 2. Texas Invasive Species Institute. http://www.tsusinvasives.org/home/database/cuscuta-japonica (Accessed: 18 May 2017)</p>	<p>1. "Generally only about 5% of the seed germinates the year following its production; the remainder of the seed can remain dormant, yet viable, in the soil for more than 20 years, depending on the species and environmental conditions. Dodder's long dormancy is thought to be largely a result of its hard seed coat. To break seed dormancy, scarification is generally required. In nature, this probably occurs through soil microbial activity, weathering, and other natural disturbances, such as fire or grazing. In managed settings, scarification likely occurs when fields are cultivated." 2. "Seeds can remain viable from 10 to 20 years "</p>

8.03	<p>1. County of Santa Barbara. http://cosb.countyofsb.org/agcomm/wma.aspx?id=29344 (Accessed: 18 May 2017) 2. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017) 3. Farmer Fred. http://www.farmerfred.com/dodder.htm (Accessed: 18 May 2017)</p>	<p>1. "Japanese dodder cannot be controlled with herbicides, alone." 2. "Hand roguing and pruning are often used in landscape settings where the use of herbicides would damage other plants. Hand pulling is only effective if the entire vine and adjoining haustoria are removed. In severely affected host plants, the entire plant may be removed and destroyed." 3. "The most successful control of dodder involves a systematic approach that combines several methods; dodder usually cannot be eliminated with a single treatment or in a single year. When dodder is detected infesting landscape and garden plants, immediate action is needed to eliminate or reduce the infestation in these locations."</p>
8.04	<p>1. Farmer Fred. http://www.farmerfred.com/dodder.htm (Accessed: 18 May 2017) 2. CABI Invasive Species Compendium. http://www.cabi.org/isc/datasheet/17116 (Accessed: 18 May 2017)</p>	<p>1. "Generally only about 5% of the seed germinates the year following its production; the remainder of the seed can remain dormant, yet viable, in the soil for more than 20 years, depending on the species and environmental conditions. Dodder's long dormancy is thought to be largely a result of its hard seed coat. To break seed dormancy, scarification is generally required. In nature, this probably occurs through soil microbial activity, weathering, and other natural disturbances, such as fire or grazing. In managed settings, scarification likely occurs when fields are cultivated."; "If dodder is observed soon after attachment, prune the infected portion of the host plant 1/8 to 1/4 inch below the point of attachment, otherwise the dodder may regenerate from the haustoria left embedded in the host plant." 2. "Tolerates, or benefits from, cultivation, browsing pressure, mutilation, fire etc"</p>
8.05	<p>1. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544 pp. http://wric.ucdavis.edu/information/natural%20areas/wr_C/Cuscuta.pdf (Accessed: 18 May 2017)</p>	<p>1. "There are currently no biological control agents available for the control of Japanese dodder. <i>Melanagromyza cuscutae</i> and the gall-forming weevils <i>Smicronyx</i> spp. have been tested for control of other <i>Cuscuta</i> spp. Similarly the fungi <i>Alternaria cuscutacidae</i> and <i>Colletotrichum gloeosporioides</i> have shown promise in some situations but none have proved reliable enough for use in practice. On <i>Cuscuta japonica</i>, a number of fungi have been studied for their potential as biocontrol agents, including <i>Fusarium solani</i>, <i>Fusarium semitectum</i>, <i>Pestalotiopsis guepini</i> [<i>Pestalotia guepinii</i>] and <i>Alternaria tenuis</i>, but they have not yet been fully developed for use."</p>