Species:	***Cannabis sativa subsp. ruderalis (Cannabis, grass, hemp, Indian hemp, marihuana, marijuana, maryjane, pot, weed) -- FLORIDA***		
Note:	[Differences highlighted in yellow] Cannabis sativa is the only species in Cannabis, although Cannabis indica L. is sometimes recognized as separate species representing the morphologically and chemically distinct drug types from Afghanistan and Pakistan. Great variation exists in Cannabis as a result of selection for fibre, oilseed or resin. This variation is further enhanced by the ease of crossing between these plant types making all subspecific classifications inexact. A geographical classification is in use for cultivated cannabis, in which North European, Central Russian, Mediterranean and Asiatic types are distinguished. The North European cannabis is characterized by a short stem (< 1.5 m) and early flowering. Fibre and fruit yields are generally low. Central Russian cannabis is cultivated in Europe and Asia between 50–60° latitude. Total growth duration is 90–110 days, with stems reaching 1.3–3 m in height. Fibre yields of these types are average, but high fruit yields may be obtained. Mediterranean cannabis is mainly cultivated south of 50° latitude in Europe. The total growth duration is 130–150 days, with stems reaching 2.5–4.5 m in height. Fibre production can be high and the fibre of good quality. Fruit yields are average. Asiatic type cannabis plants form branched stems of 2.5–3 m with short internodes. Growth duration is 150–170 days. For practical purposes, three types can be distinguished, based on the concentrations of Δ9-THC and cannabidiol: the drug (resin) type, with high Δ9-THC concentration (> 1%) and low cannabidiol content; the hemp (fibre) and seed types with very low Δ9-THC content (< 0.3%) and high cannabidiol concentration; and the intermediate type, with moderately high concentrations of both compounds. However, concentrations may change during the growing season.		
1.02	Has the species become naturalised where grown?	y	-3
1.03	Does the species have weedy races?	y	1
2.01	Species suited to FL climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)		
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	2	
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	1
3.01	Naturalized beyond native range	y	
3.02	Garden/amenity/disturbance weed	y	2
3.03	Weed of agriculture	y	2
3.04	Environmental weed	y	4
3.05	Congeneric weed	y	4
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	n	0
4.03	Parasitic		
4.04	Unpalatable to grazing animals	n	0
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	y	1
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.		
4.11	Climbing or smothering growth habit	n	0

4.12	Forms dense thickets	n	0
5.01	Aquatic		
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	n	0
6.03	Hybridizes naturally	y	1
6.04	Self-compatible or apomictic	y	1
6.05	Requires specialist pollinators		
6.06	Reproduction by vegetative propagation	n	0
6.07	Minimum generative time (years)	n	-1
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	1	1
7.02	Propagules dispersed intentionally by people		
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	y	1
7.06	Propagules bird dispersed	y	1
7.07	Propagules dispersed by other animals (externally)		
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)	y	1
8.03	Well controlled by herbicides		
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in U.S.		
	Total Score	18	
	Implemented Pacific Second Screening	**n/a**	
	Risk Assessment Results	**High**	

section	# questions answered	satisfy minimum?
A	12	yes
B	8	yes
C	15	yes
total	35	yes

	Reference	Source data
1.01	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/. 2. Wagner W.L., Herbst D. R., Sohmer S.H. Manual of the Flowering Plants of Hawaii. Honolulu: Bishop Museum Press, 1999.	1. In 450 BC, Herodotus wrote the first account of fibre hemp cultivation in Scythia. The first record of drug use of C. sativa was the prehistoric Scythians (Herodotus, 1906). Prior to this, however, cannabis was introduced to the Indian subcontinent, perhaps 12,000 years ago (Able, 1980). 2. One of the most ancient of cultivated species. A large number of species and infraspecific taxa have been described for this plant. Most of the variation is contributed to its long history of cultivation, perhaps as long as 8,500 years.
1.02	1. Wunderlin, RP & Hansen, BF. Guide to the Vascular Plants of Florida. Gainesville: University Press of Florida, Gainesville. 2003.	1. Escaped from cultivation.
1.03		
2.01	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.tif). 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (7 August 2014). 3. Efloras. Flora of China. http://www.efloras.org/flora_page.aspx?flora_id=2. Accessed 7 August 2014.	No computer analysis was performed. 1. Global hardiness zone: (3-?)4-13. 2. Distributional range: probable origin Asia (s. & c.). 3. Native to Asia. 4. Originated in temperate central Asia. Specifically,
2.02		No computer analysis was performed. Native range is well known; refer to 2.01 source data.
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. Efloras. Flora of China. http://www.efloras.org/flora_page.aspx?flora_id=2. Accessed 7 August 2014. 3. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/.	1. Distribution in the native and cultivated range is globally widespread; occurs in more than 3 climactic groups. 2. Occurs 0-2000 m. 3. C. sativa grows from sea level to 3700 m in altitude, and from the equator to approximately 63° latitude (such as in Finland).
2.04	1. World Climate Maps. http://www.climate-charts.com/World-Climate-Maps.html. Accessed 5 February 2014. 2. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/.	1. Occurs in native and cultivated areas with mean annual precipitation ≤40"-70"≥. 2. Duke (1985) found that C. sativa has optimum growth in areas receiving an annual rainfall of 970 mm.
2.05	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (7 August 2014). 2. Efloras. Flora of China. http://www.efloras.org/flora_page.aspx?flora_id=2. Accessed 7 August 2014.	1. Widely cultivated. 2. Introduced; has been reported as cultivated illegally and as apparently ruderal in all provinces and states except Alaska. It seems to be best established in the prairies and plains of central North America.
3.01	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (7 August 2014). 2. Efloras. Flora of China. http://www.efloras.org/flora_page.aspx?flora_id=2. Accessed 7 August 2014.	1. Widely naturalized. 2. Principal naturalized range: Canada (Ont., Que.); USA: (AR, CT, DE, IL, IN, IA, KS, KY, ME, MD, MA, MI, MN, MO, NE, NH, NJ, NY, ND., OH, OK, PA, RI, SD, VT, VA, WV, WI).

3.02	1. Efloras. Flora of China. http://www.efloras.org/flora_page.aspx?flora_id=2. Accessed 7 August 2014.	1. Well-manured, moist farmyards, and in open habitats, waste places (roadsides, railways, vacant lots), occasionally in fallow fields and open woods
3.03	1. Holm et al. A Geographical Atlas of World Weeds. New York: John Wiley & Sons. 1979. Print.	1. Listed as a serious weed in AFG, and a principal weed in AUS, CHN, HK, PK, PR.
3.04	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (7 August 2014).	1. Species restricted as a state noxious weed. A declared terrestrial noxious weed and/or noxious-weed seed in these U.S. states: IL*, IN*, MN*°, MO*, ND°, PA*°, WV* (*Terrestrial; °In seed.).
3.05	1. Wulijarni-Soetjipto, N., Subarnas, A., Horsten, S.F.A.J. & Stutterheim, N.C., 1999. Cannabis sativa L.[Internet] Record from Proseabase. de Padua, L.S., Bunyapraphatsara, N. and Lemmens, R.H.M.J. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org. Accessed from Internet: 11 August 2014.	1. Cannabis sativa is the only species in Cannabis.
4.01		These structures are not included in the description of this species.
4.02		No evidence found.
4.03	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (7 August 2014).	1. Family: Cannabaceae (not a parasitic family).
4.04	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/. 2. Clarke, RC. Marijuana Botany: An Advanced Study: The Propagation and Breeding of Distinctive Cannabis. Berkeley: Ronin Publishing, Inc., 1981.	Although there is evidence that C. sativa is used as fodder/animal feed, it is not know if it is preferred when grazers and browsers have a choice of species. 2. Various herbarious animals prey on Cannabis. Small rodents and birds eat the seeds and sprouts, while rabbits and such grazing animals as deer eat larger seedlings.
4.05	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/. 2. Chan, A. 2003. Poisonous Plants. University of Pennsylvania. Accessed: 11 August 2014. http://cal.vet.upenn.edu/projects/poison/plants/ppmarij.htm	1. Animal Feed, Fodder, Forage: fodder/animal feed. 2. Animals are rarely poisoned because of the low palatability of the plant. However, cattle, horses, pigs, ferrets, and dogs are susceptible to intoxication after exposure. THC concentrations are highest in flowers and leaves. CNS depression is the most commonly observed sign of poisoning in dogs. Hyperexcitability, vomiting, salivation, muscle tremors, and ataxia may also be seen in intoxicated animals. Intoxication usually lasts a few hours. In severe cases, coma and death are rarely seen.

4.06	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/. 2. Wulijarni-Soetjipto, N., Subarnas, A., Horsten, S.F.A.J. & Stutterheim, N.C., 1999. Cannabis sativa L.[Internet] Record from Proseabase. de Padua, L.S., Bunyapraphatsara, N. and Lemmens, R.H.M.J. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org. Accessed from Internet: 11 August 2014.	1. Fusarium oxysporum f.sp. cannabis, Phomopsis cannabina, Phomopsis ganjae. 2. Diseases and pests in hemp may be plant specific or general. Reported damage by hemp-specific organisms are from Grapholitha delineana, Melaspora cannabina, Phorodon cannabis, Psylliodes attenuata and Septoria cannabis. Seeds of hemp may be infected by the parasitic Orobanche racemosa L. or hemp killer. The most important non-specific diseases and pests in hemp are: Botrytis cinerea, Ostrinia nubilalis and Sclerotinia sclerotiorum. Yield may also be depressed by Cuscuta europaea L., Fusarium spp., Ditylenchus dipsaci, Tetranychus urticae, some insects of the Noctuidae and larvae of Agriotes lineata, Melolontha melolontha and Tipula paludosa. Hemp may also suffer from nematodes such as Meloidogyne hapla in northern Europe and, in northern India Neottolenchus clarus and Quinsulcius similis.
4.07		No evidence found.
4.08		No evidence found.
4.09	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/.	1. Grows well in bright sunlight. McPartland et al. (2000) describes good plant growth at 14,000-18,000 lx, or 215 W/m.
4.10	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/.	1. Grows well in nutrient rich, well drained, well structured, silty loam soil with high organic matter. The plant is a nitrophile and requires much nutrients. Able to tolerate dry conditions, although it does not thrive; grows poorly in wetlands or saturated soil.
4.11	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/.	1. Plants small (usually under 0.5 m).
4.12		
5.01	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (7 August 2014).	1. Family: Cannabaceae (not a parasitic family).
5.02	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (7 August 2014).	1. Family: Cannabaceae (not a parasitic family).
5.03	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (7 August 2014).	1. Family: Cannabaceae (not a parasitic family).
5.04	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/.	The root system is vigorous and centred by a taproot.

6.01	1. Jansen, P.C.M., 2006. Cannabis sativa L. [Internet] Record from PROTA4U. Schmelzer, G.H. & Gurib-Fakim, A. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. <http://www.prota4u.org/search.asp>. Accessed 11 August 2014.	1. Genetic variability is large. Production of large amounts of pollen and wind pollination tend to lead to extensive genetic exchange between different domesticated types and between domesticated and wild plants.
6.02	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/. 2. Wulijarni-Soetjipto, N., Subarnas, A., Horsten, S.F.A.J. & Stutterheim, N.C., 1999. Cannabis sativa L.[Internet] Record from Proseabase. de Padua, L.S., Bunyapraphatsara, N. and Lemmens, R.H.M.J. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org. Accessed from Internet: 11 August 2014.	1. Seed germinates 3-7 days after absorbing water. 2. Hemp is usually raised from seed. The seed germinates at low temperatures, but not below 1°C.
6.03	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/. 2. Jansen, P.C.M., 2006. Cannabis sativa L. [Internet] Record from PROTA4U. Schmelzer, G.H. & Gurib-Fakim, A. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands. <http://www.prota4u.org/search.asp>. Accessed 11 August 2014.	1. Cannabis segregates can interbreed and hybridize, as shown by X Cannabis intersita Sojak. 2. Genetic variability is large. Production of large amounts of pollen and wind pollination tend to lead to extensive genetic exchange between different domesticated types and between domesticated and wild plants.
6.04	1. Wulijarni-Soetjipto, N., Subarnas, A., Horsten, S.F.A.J. & Stutterheim, N.C., 1999. Cannabis sativa L.[Internet] Record from Proseabase. de Padua, L.S., Bunyapraphatsara, N. and Lemmens, R.H.M.J. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org. Accessed from Internet: 11 August 2014.	1. Hemp is normally dioecious, but monoecious cultivars have been bred; the two sexes are normally indistinguishable before flowering. Between plants and in individual plants, flowering is more synchronized at shorter daylength and higher temperatures.
6.05	1. Wulijarni-Soetjipto, N., Subarnas, A., Horsten, S.F.A.J. & Stutterheim, N.C., 1999. Cannabis sativa L.[Internet] Record from Proseabase. de Padua, L.S., Bunyapraphatsara, N. and Lemmens, R.H.M.J. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org. Accessed from Internet: 11 August 2014.	1. The flowers are wind-pollinated.
6.06	1. Wulijarni-Soetjipto, N., Subarnas, A., Horsten, S.F.A.J. & Stutterheim, N.C., 1999. Cannabis sativa L.[Internet] Record from Proseabase. de Padua, L.S., Bunyapraphatsara, N. and Lemmens, R.H.M.J. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org. Accessed from Internet: 11 August 2014.	Naturally increasing by vegetative means is not known. 1. Vegetative propagation using cuttings has been successful. However, there are morphological and biochemical differences between plants derived from seed and vegetative propagules.
6.07	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/.	1. C. sativa is an annual herb, and has a growth period of 2-10 months.
7.01		No evidence found.

7.02	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford, UK: CAB International. http://www.cabi.org/publishing-products/compendia/.	1. Feral, not cultivated.
7.03	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (7 August 2014). IN: Parsons, WT & EG Cuthbertson. Noxious Weeds of Australia. Inkata Press: Melbourne, 1992.	1. Economic importance: weed (potential seed containment).
7.04	1. Anonymous. PlantZAfrica. Cannabis sativa. Accessed 11 August 2014. http://www.plantzafrica.com/index.html	1. Marijuana seed is dispersed by wind and water.
7.05	1. Anonymous. PlantZAfrica. Cannabis sativa. Accessed 11 August 2014. http://www.plantzafrica.com/index.html	1. Marijuana seed is dispersed by wind and water.
7.06	1. Anonymous. PlantZAfrica. Cannabis sativa. Accessed 11 August 2014. http://www.plantzafrica.com/index.html	1. Birds feed on the plant.
7.07		No evidence found.
7.08	1. Anonymous. PlantZAfrica. Cannabis sativa. Accessed 11 August 2014. http://www.plantzafrica.com/index.html. 2. Clarke, RC. Marijuana Botany: An Advanced Study: The Propagation and Breeding of Distinctive Cannabis. Berkeley: Ronin Publishing, Inc., 1981.	1. Deer feed on the plant. 2. Various herbarious animals prey on Cannabis. Small rodents and birds eat the seeds.
8.01	1. CAB International, 2010. Cannabis sativa [Author unknown]. Invasive Species Compendium. Wallingford , UK: CAB International. http://www.cabi.org/publishing-products/compendia/.	1. C. sativa plants are prolific seeders; nearly half the weight of a well-pollinated female turns to seed. For example field-grown crops yield an average of 400 g seeds per plant, or about 22,000 seeds per plant (McPartland et al., 2000).
8.02	1. Wulijarni-Soetjipto, N., Subarnas, A., Horsten, S.F.A.J. & Stutterheim, N.C., 1999. Cannabis sativa L.[Internet] Record from Proseabase. de Padua, L.S., Bunyapraphatsara, N. and Lemmens, R.H.M.J. (Editors). PROSEA (Plant Resources of South-East Asia) Foundation, Bogor, Indonesia. http://www.proseanet.org. Accessed from Internet: 11 August 2014.	1. Healthy seed should give 90% germination, and if properly stored it will remain viable for up to 2 years.
8.03		No evidence found.
8.04		No evidence found.
8.05		No evidence found.