UF IFAS UNIVERSITY of FLORIDA

Assessment of Non-native Plants in Florida's Natural Areas

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Assessment date 23 Octoer 2017 Prepared by Young and Lieurance

	Ipomoea purpurea **South ZONE**	**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	1
3.02	Garden/amenity/disturbance weed	y	1
3.03	Weed of agriculture	y	1
3.04	Environmental weed	y	1
3.05	Congeneric weed	y	1
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	unk	0
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	unk	-1
4.05	Toxic to animals	y	1
4.06	Host for recognised pests and pathogens	unk	0
4.07	Causes allergies or is otherwise toxic to humans	y	1
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	unk	-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	y	1
7.05	Propagules water dispersed	y	1
7.06	Propagules bird dispersed	y	1
7.07	Propagules dispersed by other animals (externally)	n	-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	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation	unk	-1
8.05		?	
	Total Score	**22**	
	Implemented Pacific Second Screening	**no**	
	Risk Assessment Results	**High**	

section	# questions answered	satisfy minimum?
A	11	yes
B	7	yes
C	18	yes
total	36	yes

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Assessment date 23 Octoer 2017 Prepared by Young and Lieurance

	Ipomoea purpurea **Central ZONE**	**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	1	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	1	
2.03	Broad climate suitability (environmental versatility)	y	1
2.04	Native or naturalized in habitats with periodic inundation North Zone: mean annual precipitation 50-70 inches Central Zone: mean annual precipitation 40-60 inches South Zone: mean annual precipitation 40-60 inches	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	y	2
3.02	Garden/amenity/disturbance weed	y	2
3.03	Weed of agriculture	y	3
3.04	Environmental weed	y	3
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	unk	-1
4.05	Toxic to animals	y	1
4.06	Host for recognised pests and pathogens	unk	0
4.07	Causes allergies or is otherwise toxic to humans	y	1
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	unk	-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	y	1
7.05	Propagules water dispersed	y	1
7.06	Propagules bird dispersed	y	1
7.07	Propagules dispersed by other animals (externally)	n	-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	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation	unk	-1
8.05		?	
	Total Score	**20**	
	Implemented Pacific Second Screening	**no**	
	Risk Assessment Results	**High**	

section	# questions answered	satisfy minimum?
A	11	yes
B	7	yes
C	18	yes
total	36	yes

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	Ipomoea purpurea **North ZONE**	**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	0	
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	1
3.02	Garden/amenity/disturbance weed	y	1
3.03	Weed of agriculture	y	1
3.04	Environmental weed	y	1
3.05	Congeneric weed	y	1
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	unk	0
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	unk	-1
4.05	Toxic to animals	y	1
4.06	Host for recognised pests and pathogens	unk	0
4.07	Causes allergies or is otherwise toxic to humans	y	1
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	unk	-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	y	1
7.05	Propagules water dispersed	y	1
7.06	Propagules bird dispersed	y	1
7.07	Propagules dispersed by other animals (externally)	n	-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	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation	unk	-1
8.05		?	
	Total Score	**13**	
	Implemented Pacific Second Screening	**no**	
	Risk Assessment Results	**High**	

section	# questions answered	satisfy minimum?
A	11	yes
B	7	yes
C	18	yes
total	36	yes

	Reference	Source data
1.01		cultivated, but no evidence of selection for reduced weediness
1.02		
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 (0-00-0000).	No computer analysis was performed. 1. Global hardiness zone:10, 11, 12, 13 ; equivalent to USDA Hardiness zones: USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11a: to USDA Zone (40 °F) USDA Zone 11b: to (45 °F) USDA Zone 12a: to (50 °F) USDA Zone 12b: to (55 °F). 2. Native to Northern America, Southern Mexico: Mexico - Campeche, - Chiapas, - Guerrero, - Jalisco, - Michoacan, - Nayarit, - Oaxaca, - Queretaro, - Quintana Roo, - Veracruz, - Yucatan Southern America, Caribbean: Bahamas; Cuba; Dominican Republic; Haiti; Jamaica; Trinidad and Tobago. Mesoamerica: Belize; Guatemala; Honduras. Western South America: Colombia; Ecuador
2.02		
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf).	1. Distribution in the native/cultivated range occurs in As, Am, Aw, Af, Cfa, Cwb (Af, Am, Aw, Cfa are the Köppen Geiger zones in Florida)
2.04	1. Climate Charts. World Climate Maps. http://www.climate-charts.com/World-Climate-Maps.html#rain (8-19-2015)	1. Native to regions with 29 to 196 inches of rain annually
2.05	1. SEINnet http://swbiodiversity.org/seinet/taxa/index.php?taxon=3944 (10-16-2016) 2. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 3. Defelice MS, 2001. Tall Morning glory, Ipomoea purpurea (L.) Roth -- flower or foe? Weed Technology, 15:601-606.	1. Introduced from tropical America as an ornamental, somewhat common as a weed of cultivated lands and also in waste ground. 2. In northern Europe, this species was first recorded in Austria in 1800, Estonia in 1807, Russia in 1942, Norway in 1960 and Lithuania in 1988 3. Grown in gardens world-wide
3.01	1. Missouri Botanical Graden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=b754 (10-16-2016) 2. Encyclopedia of Life http://eol.org/pages/580944/details (10-17-2016) 3. Bio-NET-EAFRINET http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Ipomoea_purpurea_(Common_Morning_Glory).htm (10-22-2016)	1. Species plants have escaped gardens and naturalized throughout much of the U.S. 2. Common Morning Glory has naturalized throughout Illinois and wild plants are encountered occasionally 3. Ipomoea purpurea is naturalised in parts of Kenya and has been introduced to Tanzania and Uganda. In East Africa, it occurs in Mengo district (Uganda), Kiambu district (Kenya) and Lushoto district (Tanzania).
3.02	1. Bio-NET-EAFRINET http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Ipomoea_purpurea_(Common_Morning_Glory).htm (10-22-2016) 2. University of California Statewide Integrated Pest Management Program http://ipm.ucanr.edu/PMG/WEEDS/tall_morningglory.html (10-22-2016) 3. Defelice MS, 2001. Tall Morning glory, Ipomoea purpurea (L.) Roth -- flower or foe? Weed Technology, 15:601-606.	1. Ipomoea purpurea is mainly a weed of agricultural areas and disturbed sites (e.g. crops, roadsides, parks, gardens, fence-lines and waste areas). 2. Weed of Agronomic and vegetable crop fields, gardens, orchards, vineyards, landscaped areas, and other disturbed, unmanaged sites. 3. Can overrun gardens if not tended to properly

3.03	1. Vibrans H, 2009. Malezas de México. Listado alfabético de las especies, ordenadas por género (Weeds of Mexico. Alphabetical list of species, ordered by genera). http://www.conabio.gob.mx/malezasdemexico/convolvulaceae/ipomoea-purpurea/fichas/ficha.htm (10-16-2016) 2. Erwin, Ashley. Plant Diversity Website http://climbers.lsa.umich.edu/wp-content/uploads/2013/07/IpompurpCONVFINAL.pdf (10-16-2016) 3. University of California Statewide Integrated Pest Management Program http://ipm.ucanr.edu/PMG/WEEDS/tall_morningglory.html (10-22-2016) 3. Defelice MS, 2001. Tall Morning glory, Ipomoea purpurea (L.) Roth -- flower or foe? Weed Technology, 15:601-606.	1. This species has been recorded as weed of sesame, cotton, oats, coffee, pumpkin, sugar, marigolds, peppers, beans, fruit, bean, tomato, corn, mango, melon, tuberose, walnut, ornamental plants, potatoes , cucumber, watermelon, sorghum, soybeans, tomatoes, grapes. In dense crops, particularly corn, the spreading, twining growth of I.purpurea can impede harvest. 2. Ipomoea purpurea is common in agricultural, horticultural, nursery crops, and fallow fields. 2. under favorable conditions can become problematic, especially in cotton fields. 3. Weed interference can stunt crop growth and reduce yeild in numerous agricultural scenarios. Recognized as an agricultural weed throughout the globe.
3.04	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 2. Bio-NET-EAFRINET http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Ipomoea_purpurea_(Common_Morning_Glory).htm (10-22-2016) 3. NSW Government http://weeds.dpi.nsw.gov.au/Weeds/Details/300 (10-22-2016)	I. purpurea has the potential to become invasive because it grows climbing on mature trees, shrubs and other plant species producing a profuse canopy and consequently outcompeting the supporting species for nutrients, water and sunlight 2. Ipomoea purpurea invades bushland and riparian zones (banks of watercourses) and can be a serious environmental weed in warm moist areas, where it chokes out native plants. Once established in areas of indigenous vegetation, it is able to outcompete native species for nutrients, water and sunlight.
3.05	1. Holm, LeRoy G. A Geographical Atlas of World Weeds. Malabar, FL: Krieger Pub., 1991. Print.	1. Ipomoea triloba is a serious weed in Australia and the Phillipines. Ipomoea Aquatica is a serious weed India, Mozambique and Thailand.
4.01	1. Encyclopedia of Life http://eol.org/pages/580944/details (10-17-2016)	No evidence of these features
4.02		no evidence
4.03	1. Encyclopedia of Life http://eol.org/pages/580944/details (10-17-2016)	No evidence of these features
4.04	1. Illinios Wild Flowers http://www.illinoiswildflowers.info/weeds/plants/cm_mglory.htm (10-22-2016)	1. Because both the seeds and foliage of Common Morning Glory are mildly toxic, they are rarely used by vertebrate wildlife as a source of food. However, the Ring-Necked Pheasant and Bobwhite eat the seeds to a limited extent
4.05	1. University of California Statewide Integrated Pest Management Program http://ipm.ucanr.edu/PMG/WEEDS/tall_morningglory.html (10-22-2016)	1. Ipomea species' seeds contain many alkaloid compounds, some of which act as neurotoxins, harming humans and animals when consumed.
4.06		no evidence
4.07	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 2. Bio-NET-EAFRINET http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Ipomoea_purpurea_(Common_Morning_Glory).htm (10-22-2016) 3. University of California Statewide Integrated Pest Management Program http://ipm.ucanr.edu/PMG/WEEDS/tall_morningglory.html (10-22-2016)	1. Parts of this plant, including the seeds are poisonous if ingested. 2. Parts of this plant, including the seed are poisonous if ingested. 3. Ipomea species' seeds contain many alkaloid compounds, some of which act as neurotoxins, harming humans and animals when consumed.

4.08		no evidence
4.09	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 2. Missouri Botanical Graden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=b754 (10-16-2016)	1. The species grows best in sunny conditions and does not thrive in heavily shaded areas 2. Full sun
4.10	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 2. Plants for a Future http://www.pfaf.org/user/Plant.aspx?LatinName=Ipomoea+purpurea (10-22-2016) 3. Illinios Wild Flowers http://www.illinoiswildflowers.info/weeds/plants/cm_mglory.htm (10-22-2016)	1. I. purpurea grows best on moist, well-drained, light or sandy loam soils. However, plants are tolerant of most soil conditions, including different textures and pH as well as dry, partially saline and infertile soils. 2. light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. 3. Different kinds of soil are tolerated, including those that are loamy and gravelly.
4.11	1. Erwin, Ashley. Plant Diversity Website http://climbers.lsa.umich.edu/wp-content/uploads/2013/07/IpompurpCONVFINAL.pdf (10-16-2016) 2. Encyclopedia of Life http://eol.org/pages/580944/details (10-17-2016) 3. Bio-NET-EAFRINET http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Ipomoea_purpurea_(Common_Morning_Glory).htm (10-22-2016)	1. Climbing plant 2. Trailing or climbing annual. 3. Ipomoea purpurea is a herbaceous annual twining climber.
4.12		no evidence
5.01		Family: Convolvulaceae
5.02		Family: Convolvulaceae
5.03		Family: Convolvulaceae (herbaceous)
5.04	1. Encyclopedia of Life http://eol.org/pages/580944/details (10-17-2016)	No evidence of these features
6.01		no evidence
6.02	1. Vibrans H, 2009. Malezas de México. Listado alfabético de las especies, ordenadas por género (Weeds of Mexico. Alphabetical list of species, ordered by genera). http://www.conabio.gob.mx/malezasdemexico/convolvulaceae/ipomoea-purpurea/fichas/ficha.htm (10-16-2016) 2. Missouri Botanical Graden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=b754 (10-16-2016) 3. Defelice MS, 2001. Tall Morning glory, Ipomoea purpurea (L.) Roth -- flower or foe? Weed Technology, 15:601-606.	1. Spreads by seed 2. It is easily grown from seed 3. Grown from seed, hard seed coat contributes to dormancy
6.03		no evidence
6.04	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 2. Defelice MS, 2001. Tall Morning glory, Ipomoea purpurea (L.) Roth -- flower or foe? Weed Technology, 15:601-606.	The species relies primarily on insect pollination, but it is self-compatible and thus also capable of self-pollination. About 30% of the flowers are self-pollinated. 2. Species can be self-pollinated
6.05	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 2. Encyclopedia of Life http://eol.org/pages/580944/details (10-17-2016)	1. I. purpurea flowers open in the morning and last from a few hours to through the day. The species relies primarily on insect pollination, but it is self-compatible and thus also capable of self-pollination. About 30% of the flowers are self-pollinated. Cross-pollination occurs mostly by bumblebees and small butterflies; darker coloured flowers have a higher degree of outcrossing 2. Insects & hummingbirds suck nectar; some bees also collect pollen
6.06		no evidence
6.07		no evidence

7.01	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 2. Weber, E., Sun, S. G., & Li, B. (2008). Invasive alien plants in China: diversity and ecological insights. Biological Invasions, 10(8), 1411-1429. 3. Erwin, Ashley. Plant Diversity Website http://climbers.lsa.umich.edu/wp-content/uploads/2013/07/IpompurpCONVFINAL.pdf (10-16-2016) 4. Encyclopedia of Life http://eol.org/pages/580944/details (10-17-2016)	1. I. purpurea can be found growing in agricultural, horticultural and nursery crops, and in uncultivated fields. It also grows along roadsides, in waste places, and in thickets in secondary forests.... Seeds can also be secondarily dispersed by human activities via contaminated crop and flower seeds 2. growing in disturbed ruderal sites 3. found along roadsides, waste places 4. Habitats include fields, roadsides, gravelly areas along railroads, fence rows, and waste areas. Relatively open areas with a history of disturbance are preferred. This plant is still widely cultivated in gardens and around yards. Depending on the habitat, a population of naturalized plants can be either persistent or ephemeral
7.02	1. SEINnet http://swbiodiversity.org/seinet/taxa/index.php?taxon=3944 (10-16-2016) 2. Illinios Wild Flowers http://www.illinoiswildflowers.info/weeds/plants/cm_mglory.htm (10-22-2016) 3. Defelice MS, 2001. Tall Morning glory, Ipomoea purpurea (L.) Roth -- flower or foe? Weed Technology, 15:601-606.	1. This species is the commonly planted garden morning glory. 2. Common Morning Glory was introduced into North America from South America as an ornamental plant. 3. Long history of planting as an ornamental plant world-wide
7.03	1. University of California Statewide Integrated Pest Management Program http://ipm.ucanr.edu/PMG/WEEDS/tall_morningglory.html (10-22-2016)	1. Contaminates forage grains
7.04	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016)	Seeds can be dispersed by wind, rain, and gravity. Seeds can also be secondarily dispersed by birds and by human activities via contaminated crop and flower seeds
7.05	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016)	Seeds can be dispersed by wind, rain, and gravity. Seeds can also be secondarily dispersed by birds and by human activities via contaminated crop and flower seeds
7.06	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016)	Seeds can be dispersed by wind, rain, and gravity. Seeds can also be secondarily dispersed by birds and by human activities via contaminated crop and flower seeds
7.07	1. Defelice MS, 2001. Tall Morning glory, Ipomoea purpurea (L.) Roth -- flower or foe? Weed Technology, 15:601-606.	no evidence 1. No mechanism of attachment as the seed has a hard seed coat.
7.08	1. Illinios Wild Flowers http://www.illinoiswildflowers.info/weeds/plants/cm_mglory.htm (10-22-2016)	1. Because both the seeds and foliage of Common Morning Glory are mildly toxic, they are rarely used by vertebrate wildlife as a source of food. However, the Ring-Necked Pheasant and Bobwhite eat the seeds to a limited extent
8.01	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 2. Defelice MS, 2001. Tall Morning glory, Ipomoea purpurea (L.) Roth -- flower or foe? Weed Technology, 15:601-606.	I. purpurea is a copious seed producer. Reproductive individuals can produce up to 26,000 seeds/plant. 2. One plant can produce 26,000 seeds
8.02	1. Defelice MS, 2001. Tall Morning glory, Ipomoea purpurea (L.) Roth -- flower or foe? Weed Technology, 15:601-606. 2. Elmore, C. D., Hurst, H. R., & Austin, D. F. (1990). Biology and control of morningglory (Ipomoea spp.). Reviews of Weed Science, 5, 83-114.	1. Seeds can survive many years in the soil due to their hard seed coat and are dormant when matureb 2. Seed survival in soil is longer than one year.

8.03	1. CABI http://www.cabi.org/isc/datasheet/40052 (10-16-2016) 2. Bio-NET-EAFRINET http://keys.lucidcentral.org/keys/v3/eafrinet/weeds/key/weeds/Media/Html/Ipomoea_purpurea_(Common_Morning_Glory).htm (10-22-2016)	1. The herbicides 2,4-D, atrazine, diquat, diuron, glyphosate, oxyfluorfen, pronamide and simazine have been recommended for annual morning-glory. For large infestations, the stems can be cut higher up (breast height) causing the upper growth to die. Then the basal stems can be cut closer to the ground following with an undiluted (or up to 1: 3 dilution) dose of herbicide such as glyphosate onto the stems 2. Control can be acheived by cutting plants down to stumps and painting with a suitable herbicide.
8.04		no evidence
8.05		no evidence