

Assessment date 9 December 2015

<i>Iris pseudacorus</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	unk	
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	y	1
4.05	Toxic to animals	y	1
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	unk	0
4.09	Is a shade tolerant plant at some stage of its life cycle	unk	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	n	0
4.12	Forms dense thickets	y	1
5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	y	1
6.01	Evidence of substantial reproductive failure in native habitat	n	0
6.02	Produces viable seed	y	1

6.03	Hybridizes naturally	?	
6.04	Self-compatible or apomictic	?	
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	y	1
6.07	Minimum generative time (years)	>3	-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	n	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed	y	1
7.06	Propagules bird dispersed	n	-1
7.07	Propagules dispersed by other animals (externally)	unk	-1
7.08	Propagules dispersed by other animals (internally)	n	-1
8.01	Prolific seed production	n	-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			14
Implemented Pacific Second Screening			n/a
Risk Assessment Results			High

section	# questions answered	satisfy minimum?
A		10 yes
B		8 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	<p>1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgn.d.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 (11-9-2015). 3. GBIF http://www.gbif.org/species/5298231 (11-9-2015)</p>	<p>No computer analysis was performed. 1. Global hardiness zone: 4, 5, 6, 7, 8, 9, 10 ; equivalent to USDA Hardiness zones: USDA Zone 4a: to -34.4 °C (-30 °F) USDA Zone 4b: to -31.6 °C (-25 °F) USDA Zone 5a: to -28.8 °C (-20 °F) USDA Zone 5b: to -26.1 °C (-15 °F) USDA Zone 6a: to -23.3 °C (-10 °F) USDA Zone 6b: to -20.5 °C (-5 °F) USDA Zone 7a: to -17.7 °C (0 °F) USDA Zone 7b: to -14.9 °C (5 °F) USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15 °F) USDA Zone 9a: to -6.6 °C (20 °F) 2. Native to AFRICA Macaronesia: Portugal - Madeira Islands; Spain - Canary Islands Northern Africa: Algeria; Morocco ASIA-TEMPERATE Western Asia: Iran; Syria; Turkey Caucasus: Azerbaijan; Russian Federation - Ciscaucasia Siberia: Russian Federation - Western Siberia EUROPE Northern Europe: Denmark; Finland; Ireland; Norway; Sweden; United Kingdom Middle Europe: Austria; Belgium; Czechoslovakia; Germany; Hungary; Netherlands; Poland; Switzerland East Europe: Belarus; Estonia; Latvia; Lithuania; Moldova; Russian Federation - European part; Ukraine [incl. Krym] Southeastern Europe: Bulgaria; Former Yugoslavia; Greece [incl. Crete]; Italy [incl. Sardinia, Sicily]; Romania Southwestern Europe: France [incl. Corsica]; Portugal; Spain</p>
2.02		
2.03	<p>1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. GBIF http://www.gbif.org/species/5298231 (11-9-2015)</p>	<p>1. Distribution in the native/cultivated range occurs in Cfb, Csa, Cfa, Csb, Dfc, Dfb, Dsh, Aw</p>
2.04	<p>1. Climate Charts. World Climate Maps. http://www.climate-charts.com/World-Climate-Maps.html#rain (8-19-2015) 2. GBIF http://www.gbif.org/species/5298231 (11-9-2015)</p>	<p>1. and 2. Native to regions with rainfall from 10 to 100+ inches of rainfall annually.</p>
2.05	<p>1. Invasive Plant Atlas of New England https://www.eddmaps.org/ipane/ipanespecies/herbs/Iris_pseudacorus.htm (11-15-2015) 2. Oregon Department of Agriculture Pest Risk Assessment for Iris pseudacorus February 2005 http://c.ymcdn.com/sites/www.oan.org/resource/resmgr/imported/pdf/yellowirisRA2005.pdf (11-15-2015)</p>	<p>1. Iris pseudacorus was most likely introduced via garden plantings around the middle 1800's. 2. Native to Europe, Great Britain, North Africa and the Mediterranean region, yellow flag iris has been introduced in temperate areas nearly worldwide and occurs throughout the United States except in the Rocky Mountains.</p>
3.01	<p>1. Oregon Department of Agriculture Pest Risk Assessment for Iris pseudacorus February 2005 http://c.ymcdn.com/sites/www.oan.org/resource/resmgr/imported/pdf/yellowirisRA2005.pdf (11-15-2015) 2. CalFlora http://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=4358 (11-16-2015) 3. Canada Biodiversity Information Facility http://www.cbif.gc.ca/eng/species-bank/canadian-poisonous-plants-information-system/all-plants-scientific-name/iris-pseudacorus/?id=1370403266897 (11-16-2015)</p>	<p>1. The species has naturalized extensively and is currently distributed across the United States. 2. perennial herb that is not native to California; it was introduced from elsewhere and naturalized in the wild. 3. Yellow iris (Iris pseudacorus) is a naturalized plant found in wet areas in parts of southern Canada.</p>
3.02	<p>1. Invasive Plant Atlas http://www.invasiveplantatlas.org/subject.html?sub=5853 (11-16-2015) 2. Carol Savonen Oregon State University Extension Service http://extension.oregonstate.edu/gardening/node/1008 (11-16-2015)</p>	<p>1. Yellow flag iris is a perennial plant that occurs in wet areas such as ditches and marshes. 2. It appears to be most common near developed areas.</p>
3.03		no evidence

3.04	1. Evergreen. 2007. Invasive plant profile: Yellow Flag Iris, Yellow Flag. <i>Iris pseudacorus</i> . Evergreen, Vancouver, British Columbia, Canada. http://www.evergreen.ca/downloads/pdfs/Invasive-Plant-Profile-Yellow-Flag-Iris.pdf (11-13-2015)2. Stone, K. R. 2009. <i>Iris pseudacorus</i> . In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory 3. 1. <i>Iris pseudacorus</i> USGS Nonindigenous Aquatic Species Database, Gainesville, FL, and NOAA Great Lakes Aquatic Nonindigenous Species Information System, Ann Arbor, MI. < http://nas.er.usgs.gov/queries/greatlakes/FactSheet.aspx?SpeciesID=1115&Potential=N&Type=0&HUCNumber=DGreatLakes > Revision Date: 9/23/2012	1. Forms dense thickets that displace sedges and rushes, which alters animal habitat 2. By suppressing willows and providing a raised surface, pale- yellow iris promoted the spread of species not needing a mineral surface for establishment (e.g., green ash). In turn, this change in species composition facilitated the succession from marsh to swamp 3. Populations...create a positive feedback loop: once established, the roots trap sediment, which enables growth of new seedlings, which in turn trap more sediment....This increase in sedimentation also creates new habitat for shrubs and trees, thereby altering it to a drier ecosystem
3.05	1. Holm, LeRoy G. A Geographical Atlas of World Weeds. Malabar, FL: Krieger Pub., 1991. Print.	1. <i>I. foetidissima</i> as a principal weed in New Zealand
4.01	1. Missouri Botanical Garden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=c797 (11-15-2015)	no evidence of these features
4.02		no evidence
4.03		no evidence
4.04	1. <i>Iris pseudacorus</i> USGS Nonindigenous Aquatic Species Database, Gainesville, FL, and NOAA Great Lakes Aquatic Nonindigenous Species Information System, Ann Arbor, MI. < http://nas.er.usgs.gov/queries/greatlakes/FactSheet.aspx?SpeciesID=1115&Potential=N&Type=0&HUCNumber=DGreatLakes > Revision Date: 9/23/2012 2. Canada Biodiversity Information Facility http://www.cbif.gc.ca/eng/species-bank/canadian-poisonous-plants-information-system/all-plants-scientific-name/iris-pseudacorus/?id=1370403266897 (11-16-2015)	1. <i>Iris pseudacorus</i> is toxic and many animals avoid eating this plant... Because palatable species go relatively untouched when intermingled with <i>I. pseudacorus</i> , the quality of pastureland can be reduced 2. This plant has poisoned cattle and swine and may cause similar symptoms in humans if the rhizomes are ingested.
4.05	1. ISSG. 2013. Global Invasive Species Database. The World Conservation Union Species Survival Commission, Invasive Species Specialist Group (ISSG). http://www.issg.org/database/welcome/ . (Archived at PERAL) 2. <i>Iris pseudacorus</i> USGS Nonindigenous Aquatic Species Database, Gainesville, FL, and NOAA Great Lakes Aquatic Nonindigenous Species Information System, Ann Arbor, MI. < http://nas.er.usgs.gov/queries/greatlakes/FactSheet.aspx?SpeciesID=1115&Potential=N&Type=0&HUCNumber=DGreatLakes > Revision Date: 9/23/2012	1. <i>I. pseudacorus</i> is toxic to animals 2. <i>Iris pseudacorus</i> is toxic and many animals avoid eating this plant
4.06	1. Missouri Botanical Garden http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=c797 (11-15-2015)	1. No serious insect or disease problems.
4.07	1. Dave's Garden http://davesgarden.com/guides/pf/go/666/#b (11-9-2015) 2. <i>Iris pseudacorus</i> USGS Nonindigenous Aquatic Species Database, Gainesville, FL, and NOAA Great Lakes Aquatic Nonindigenous Species Information System, Ann Arbor, MI. < http://nas.er.usgs.gov/queries/greatlakes/FactSheet.aspx?SpeciesID=1115&Potential=N&Type=0&HUCNumber=DGreatLakes > Revision Date: 9/23/2012	1. Parts of plant are poisonous if ingested. Handling plant may cause skin irritation or allergic reaction 2. the sap from its plants can irritate and blister human skin
4.08		no evidence
4.09	1. Dave's Garden http://davesgarden.com/guides/pf/go/666/#b (11-9-2015) 2. Stone, K. R. 2009. <i>Iris pseudacorus</i> . In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.	1. Full sun to partial shade 2. In wooded or shaded habitats, less flowering occurs and plants tend to spread linearly. Shaded plants tend to have fewer and longer leaves than plants in open areas....low light may limit seedling establishment but not growth of mature pale-yellow iris plants
4.10		Insufficient evidence
4.11	1. Sutherland, W. J. 1990. Biological flora of the British Isles. <i>Iris pseudacorus</i> L. <i>Journal of Ecology</i> 78(3):833-848.	1. <i>Iris pseudacorus</i> is a herbaceous plant with erect leaves and is not a vine

4.12	<p>1. Falinska K. 1986. Demography of <i>Iris pseudacorus</i> L. populations in abandoned meadows. <i>Ekol. Polska</i> 34(4):583-613</p> <p>2. South African National Biodiversity Institute http://www.sanbi.org/information/infobases/invasive-alien-plant-alert/iris-pseudacorus (11-13-2015)</p>	<p>1. <i>Iris pseudacorus</i> is a fast-growing and fast-spreading invasive plant that can outcompete other wetland plants, forming almost impenetrable thickets, in much the same way as cat-tails (<i>Typha</i>) do. Individuals produce from several dozen to several hundred rooted rosettes and flowering shoots connected by durable rhizomes</p> <p>2. Yellow-flag iris is a fast-growing and fast-spreading weed that creates thickets in water just like cattail (dense stands).</p>
5.01	<p>1. Stone, K. R. 2009. <i>Iris pseudacorus</i>. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.</p> <p>2. Sutherland, W. J. 1990. Biological flora of the British Isles. <i>Iris pseudacorus</i> L. <i>Journal of Ecology</i> 78(3):833-848.</p>	<p>1. Pale-yellow iris generally establishes in areas that are moist but not waterlogged.</p> <p>2. <i>Iris pseudacorus</i> usually grows in sites with a continuously high soil-water content but the soil does not need to be submerged and the plant is capable of growth in dry sandy soil</p>
5.02		Family: Iridaceae
5.03		This plant is herbaceous, not woody
5.04	<p>1. Stone, K. R. 2009. <i>Iris pseudacorus</i>. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.</p>	1. Geophyte with presence of storage organs.
6.01		no evidence
6.02	<p>1. <i>Iris pseudacorus</i> USGS Nonindigenous Aquatic Species Database, Gainesville, FL, and NOAA Great Lakes Aquatic Nonindigenous Species Information System, Ann Arbor, MI. <http://nas.er.usgs.gov/queries/greatlakes/FactSheet.aspx?SpeciesID=1115&Potential=N&Type=0&HUCNumber=DGreatLakes> Revision Date: 9/23/2012</p> <p>2. Evergreen. 2007. Invasive plant profile: Yellow Flag Iris, Yellow Flag. <i>Iris pseudacorus</i>. Evergreen, Vancouver, British Columbia, Canada. http://www.evergreen.ca/downloads/pdfs/Invasive-Plant-Profile-Yellow-Flag-Iris.pdf (11-13-2015)</p> <p>3. 1. Stone, K. R. 2009. <i>Iris pseudacorus</i>. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.</p>	<p>1. Germination from seed is moderately successful.</p> <p>2. It spreads by both underground rhizomes and seeds</p> <p>3. Pale-yellow iris reproduces both vegetatively and by seed.</p>
6.03		no evidence
6.04	<p>1. Stone, K. R. 2009. <i>Iris pseudacorus</i>. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.</p> <p>2. Plants for a Future http://www.pfaf.org/user/Plant.aspx?LatinName=Iris+pseudacorus (11-15-2015)</p>	1. Pale-yellow iris is a cross-fertilizing species
6.05	<p>1. Stone, K. R. 2009. <i>Iris pseudacorus</i>. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.</p> <p>2. Sutherland, W. J. 1990. Biological flora of the British Isles. <i>Iris pseudacorus</i> L. <i>Journal of Ecology</i> 78(3):833-848.</p>	1. Also attracts butterflies and hummingbirds
6.06	<p>1. Dave's Garden http://davesgarden.com/guides/pf/go/666/#b (11-9-2015)</p> <p>2. Stone, K. R. 2009. <i>Iris pseudacorus</i>. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.</p>	1. Propagated by dividing rhizomes, tubers, corms or bulbs (including offsets)
6.07	<p>1. <i>Iris pseudacorus</i> USGS Nonindigenous Aquatic Species Database, Gainesville, FL, and NOAA Great Lakes Aquatic Nonindigenous Species Information System, Ann Arbor, MI. <http://nas.er.usgs.gov/queries/greatlakes/FactSheet.aspx?SpeciesID=1115&Potential=N&Type=0&HUCNumber=DGreatLakes> Revision Date: 9/23/2012</p>	1. Plants require three years of growth before they reach maturity and are able to flower
7.01	<p>1. United States Department of Agriculture Weed Risk Assessment for <i>Iris pseudacorus</i> L. (Iridaceae) – Yellow flag iris https://www.aphis.usda.gov/plant_health/plant_pest_info/weeds/downloads/wra/Iris_pseudacorus_WRA.pdf (11-15-2015)</p>	1. Plant can spread if rhizomes are broken off during eradication and float downstream. Equipment should be cleaned after eradication to avoid spread.

7.02	1. Oregon Department of Agriculture Pest Risk Assessment for <i>Iris pseudacorus</i> February 2005 http://c.ymcdn.com/sites/www.oan.org/resource/resmgr/imported/pdf/yellowirisRA2005.pdf (11-15-2015) 2. 1. <i>Iris pseudacorus</i> USGS Nonindigenous Aquatic Species Database, Gainesville, FL, and NOAA Great Lakes Aquatic Nonindigenous Species Information System, Ann Arbor, MI. < http://nas.er.usgs.gov/queries/greatlakes/FactSheet.aspx?SpeciesID=1115&Potential=N&Type=0&HUCNumber=DGreatLakes > Revision Date: 9/23/2012	1. A variegated variety is popular with aquatic gardeners and can be found in several catalogs and web sites. The ease with which this plant can be established using rhizome fragments has led to extensive trading among gardeners and aquatic plant enthusiasts. 2. Popular outdoor garden and landscape ornamental
7.03		no evidence
7.04	1. Maryland Department of Agriculture Weed Risk Assessment for <i>Iris pseudacorus</i> L. (Iridaceae) – Yellow flag iris April 3, 2015	No evidence. The seeds do not have any adaptations for wind dispersal.
7.05	1. Sutherland, W. J. 1990. Biological flora of the British Isles. <i>Iris pseudacorus</i> L. <i>Journal of Ecology</i> 78(3):833-848. 2. Weber, E. 2003. <i>Invasive Plant Species of the World: A Reference Guide to Environmental Weeds</i> . CABI Publishing, Wallingford, UK. 548 pp.	1. Spreads downstream by rhizomes 2. Rhizomes and seeds are dispersed by water
7.06	1. Sutherland, W. J. 1990. Biological flora of the British Isles. <i>Iris pseudacorus</i> L. <i>Journal of Ecology</i> 78(3):833-848.	1. The seeds are not mentioned in the recorded diet of any bird
7.07		no evidence
7.08	1. <i>Iris pseudacorus</i> USGS Nonindigenous Aquatic Species Database, Gainesville, FL, and NOAA Great Lakes Aquatic Nonindigenous Species Information System, Ann Arbor, MI. < http://nas.er.usgs.gov/queries/greatlakes/FactSheet.aspx?SpeciesID=1115&Potential=N&Type=0&HUCNumber=DGreatLakes > Revision Date: 9/23/2012	1. <i>Iris pseudacorus</i> is toxic and many animals avoid eating this plant
8.01	1. United States Department of Agriculture Weed Risk Assessment for <i>Iris pseudacorus</i> L. (Iridaceae) – Yellow flag iris https://www.aphis.usda.gov/plant_health/plant_pest_info/weeds/downloads/wra/Iris_pseudacorus_WRA.pdf (11-15-2015)	Does not exhibit prolific seed production
8.02	1. Stone, K. R. 2009. <i>Iris pseudacorus</i> . In: <i>Fire Effects Information System</i> , [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. 2. Evergreen. 2007. <i>Invasive plant profile: Yellow Flag Iris, Yellow Flag. Iris pseudacorus</i> . Evergreen, Vancouver, British Columbia, Canada. http://www.evergreen.ca/downloads/pdfs/Invasive-Plant-Profile-Yellow-Flag-Iris.pdf (11-13-2015)	1. In Poland, there are 3 bursts of seed germination; the majority of germination occurs in spring, followed by limited summer and autumn germination 2. The considerable viable seed bank in the soil has meant that areas disturbed in the process of removing yellow flag iris corms are often re-colonized with yellow flag seedlings from the seed bank. S
8.03	1. Sutherland, W. J. 1990. Biological flora of the British Isles. <i>Iris pseudacorus</i> L. <i>Journal of Ecology</i> 78(3):833-848. 2. ISSG. 2013. <i>Global Invasive Species Database</i> . The World Conservation Union Species Survival Commission, Invasive Species Specialist Group (ISSG). http://www.issg.org/database/welcome/ . (Archived at PERAL). 3. Stone, K. R. 2009. <i>Iris pseudacorus</i> . In: <i>Fire Effects Information System</i> , [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.	1. It is susceptible to many herbicides but resistant to Terbutryne 2. Effectively controlled by herbicides 3. Controlled in natural systems by herbicides and manually digging out plants
8.04		Insufficient evidence
8.05		no evidence