

Part IV. Plant Assessment Form

For use with “Criteria for Categorizing Invasive Non-Native Plants that Threaten Wildlands”

by the California Exotic Pest Plant Council and the Southwest Vegetation Management Association

Table 1. Species and Evaluator Information

Species name (Latin binomial):	<i>Zantedeschia aethiopica</i>
Synonyms:	
Common names:	Calla lily; arum lily
Evaluation date (mm/dd/yy):	7/31/03
Evaluator #1 Name/Title:	Peter J. Warner
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Evaluator #2 Name/Title:	enter text here
Affiliation:	enter text here
Phone numbers:	enter text here
Email address:	enter text here
Address:	enter text here

Section below for list committee use—please leave blank

List committee members:	Jake Sigg, Peter Warner, Joe DiTomaso, Doug Johnson, Brianna Richardson
Committee review date:	8/01/03
List date:	enter text here
Re-evaluation date(s):	enter text here

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	U	None
1.2	Impact on plant community	C	observational
1.3	Impact on higher trophic levels	U	None
1.4	Impact on genetic integrity	D	Published, other

“Impact”
Enter four characters from Q1.1-1.4 below:
UCUD
Use matrix determine the score; enter below:
C

2.1	Role of anthropogenic and natural disturbance	B 2	observational
2.2	Local rate of spread with no management	B 2	observational
2.3	Recent trend in total area infested within state	B 2	observational
2.4	Innate reproductive potential	A 3	Published, other
2.5	Potential for human-caused dispersal	A 3	Published, other
2.6	Potential for natural long-distance dispersal	B 2	Published, other
2.7	Other regions invaded	B 2	Published, other

“Invasiveness”
For questions at left, recall that an A gets 3 points, a B gets 2, a C gets 1, and a D or U gets=0. Enter the sum total of all points for Q2.1-2.7 below:
16
Use matrix to determine score and enter below:
B

“Plant Score”
Using matrix, determine the Overall Score and Alert Status from the three section scores and enter them below:
Low

3.1	Ecological amplitude	B	observational
3.2	Distribution	D	observational

“Distribution”
Use matrix determine the score; enter below:
C

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes
Identify ecosystem processes impacted: possibly water availability
Rationale: inference from the species' invasiveness in wetlands
Sources of information: Randall, RP, and SG Lloyd. 2003. Weed warning from downunder. CalEPPC News 11 (1) 4-6.; Peter Warner (personal observations)
Question 1.2 Impact on plant community composition, structure, and interactions
Identify type of impact or alteration: displaces native wetland species
Rationale: observations
Sources of information: Peter Warner
Question 1.3 Impact on higher trophic levels
Identify type of impact or alteration: probable toxicity to vertebrates
Rationale: inferred from human toxicity from oxalate crystals
Sources of information: Russell, AB, JW Hardin, L Grand, and A Fraser. 1997. Poisonous Plants of North Carolina. On-line reference at http://www.ces.ncsu.edu/depts/hort/consumer/poison/Zanteae.htm
Question 1.4 Impact on genetic integrity
Identify impacts: none known; no native species closely related
Rationale: inferred from available phylogenetic information
Sources of information: Hickman, JC, et al. 1993. The Jepson Manual: Higher Vascular Plants of California
Question 2.1 Role of anthropogenic and natural disturbance in establishment
Describe role of disturbance: little or no apparent human-caused disturbance needed
Rationale: observational – sites invaded not clearly disturbed; may invade in wetlands with altered nutrient regimes, pH levels, etc.

Sources of information: Peter Warner (personal observations)
Question 2.2 Local rate of spread with no management
Describe rate of spread: appears to be increasing, invading into additional wetland habitats at a moderate rate
Rationale: general observation
Sources of information: Peter Warner
Question 2.3 Recent trend in total area infested within state
Describe trend: estimated to be slowly increasing in range and sites invaded; many suitable habitats remain uninfested
Rationale: personal observations; CLIMATE computer-modelling program
Sources of information: Peter Warner (personal observations); Randall, RP, and SG Lloyd. 2003. Weed warning from downunder. CalEPPC News 11 (1) 4-6
Question 2.4 Innate reproductive potential
Describe key reproductive characteristics: rhizomes, seeds
Rationale: published information; personal observations
Sources of information: Pacific Island Ecosystems at Risk website (http://www.hear.org/pier/zaet.htm); Peter Warner (personal observations)
Question 2.5 Potential for human-caused dispersal
Identify dispersal mechanisms: widely sold, propagated, and cultivated commercially; rhizomes dispersed by dumping of garden waste
Rationale: most available information on this taxon is about its horticultural uses; personal observations
Sources of information: numerous horticulturally oriented websites (http://www.geocities.com/RainForest/Vines/7025/calla_lily.html ; http://www.mobot.org/gardeninghelp/plantfinder/codea/A475.shtml); Peter Warner (personal observations)
Question 2.6 Potential for natural long-distance dispersal
Identify dispersal mechanisms: seeds dispersed by birds

Rationale: written information; also inferred from observations of new populations or those restricted to one or a few plants, these suggesting that plants originated from seed dispersal and not from rhizomes
Sources of information: Pacific Island Ecosystems at Risk website (http://www.hear.org/pier/zaact.htm); Peter Warner (personal observation)
Question 2.7 Other regions invaded
Identify other regions: southern Australia wetlands and mesic areas
Rationale: written report
Sources of information: Randall, RP, and SG Lloyd. 2003. Weed warning from downunder. CalEPPC News 11 (1) 4-6
Question 3.1 Ecological amplitude
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: invasive in freshwater wetlands
Rationale: written information; observations
Sources of information: Randall, RP, and SG Lloyd. 2003. Weed warning from downunder. CalEPPC News 11 (1) 4-6 Peter Warner (personal observations)
Question 3.2 Distribution
Describe distribution: common in north coastal wetlands and seeps, but many such sites not invaded
Rationale: observations
Sources of information: Peter Warner (personal observations)

Worksheet A

Complete this worksheet to answer Question 2.4.

Reaches reproductive maturity in 2 years or less	Yes
Dense infestations produce >1,000 viable seed per square meter	No
Populations of this species produce seeds every year.	Yes
Seed production sustained over 3 or more months within a population annually	No
Seeds remain viable in soil for three or more years	Unknown
Viable seed produced with <i>both</i> self-pollination and cross-pollination	Unknown
Has quickly spreading vegetative structures (rhizomes, roots, etc.) that may root at nodes	Yes
Fragments easily and fragments can become established elsewhere	yes
Resprouts readily when cut, grazed, or burned	Yes
	6 2
	A
Note any related traits: enter text here	

Worksheet C - California Ecological Types

Major Ecological Types	Minor Ecological Types	Code
Marine Systems	marine systems	score
Freshwater and Estuarine Aquatic Systems	lakes, ponds, reservoirs	score
	rivers, streams, canals	score
	estuaries	score
Dunes	coastal	score
	desert	score
	interior	score
Scrub and Chaparral	coastal bluff scrub	score
	coastal scrub	score
	Sonoran desert scrub	score
	Mojavean desert scrub (incl. Joshua tree woodland)	score
	Great Basin scrub	score
	chenopod scrub	score
	montane dwarf scrub	score
Upper Sonoran subshrub scrub	score	
Grasslands, Vernal Pools, Meadows, and other Herb Communities	coastal prairie	D
	valley and foothill grassland	score
	Great Basin grassland	score
	vernal pool	score
	meadow and seep	score
	alkali playa	score
	pebble plain	score
Bog and Marsh	bog and fen	D
	marsh and swamp	D
Riparian and Bottomland	riparian forest	score
	riparian woodland	score
	riparian scrub (incl. desert washes)	score
Woodland	cismontane woodland	score
	piñon and juniper woodland	score
	Sonoran thorn woodland	score
Forest	broadleaved upland forest	score
	North Coast coniferous forest	score
	closed cone coniferous forest	score
	lower montane coniferous forest	score
	upper montane coniferous forest	score
	subalpine coniferous forest	score
Alpine Habitats	alpine boulder and rock field	score
	alpine dwarf scrub	score

* A. means >50% of type occurrences are invaded; B means >20% to 50%; C. means >5% to 20%; D. means present but ≤5%; U. means unknown (unable to estimate percentage of occurrences invaded).