

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

Electronic version, February 28, 2003

Table 1. Species and Evaluator Information

Species name (Latin binomial):	Phragmites australis (Cav.) Trin ex. Steud.
Synonyms:	
Common names:	Common Reed
Evaluation date (mm/dd/yy):	03/17/05
Evaluator #1 Name/Title:	Don Mayall
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Evaluator #2 Name/Title:	
Affiliation:	
Phone numbers:	
Email address:	
Address:	

Section below for list committee use—please leave blank

List committee members:	enter text here
Committee review date:	enter text here
List date:	enter text here
Re-evaluation date(s):	enter text here

General comments on this assessment:

Global genetic issues make it unclear which strains may be non-native in California. Non-native strains on the East Coast are major invasives there. Phragmites is sometimes problematic in California, but it is unclear whether it was historically present in all regions of California. Listing inconclusive.

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	B	Other Pub. Mat'l
1.2	Impact on plant community	B	Other Pub. Mat'l
1.3	Impact on higher trophic levels	B	Other Pub. Mat'l
1.4	Impact on genetic integrity	B	Other Pub. Mat'l

Impact

Enter four characters from Q1.1-1.4 below:

BBBB

Using matrix, determine score and enter below:

B

2.1	Role of anthropogenic and natural disturbance	B (2 pts)	Rev'd, Sci. Pub'n
2.2	Local rate of spread with no management	A (3 pts)	Anecdotal
2.3	Recent trend in total area infested within state	C (1 pt)	Anecdotal
2.4	Innate reproductive potential Wksht A	A (3 pts)	Other Pub. Mat'l
2.5	Potential for human-caused dispersal	A (3 pts)	Anecdotal
2.6	Potential for natural long-distance dispersal	C (1 pt)	Other Pub. Mat'l
2.7	Other regions invaded	C (1 pt)	Other Pub. Mat'l

Invasiveness

Enter the sum total of all points for Q2.1-2.7 below:

14

Use matrix to determine score and enter below:

B

Plant Score

Using matrix, determine Overall Score and Alert Status from the three section scores and enter below:

Medium

No Alert

3.1	Ecological amplitude/Range	A	Other Pub. Mat'l
3.2	Distribution/Peak frequency Wksht C	D	Observational

Distribution

Using matrix, determine score and enter below:

B

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	B Other Pub. Mat'l back
Identify ecosystem processes impacted: Changes marsh hydrology; normal hydroperiod reduced because of stalk density, reduced light availability, increase fire potential in Eastern US. Not as invasive thus far in California and many populations are considered native.	
Rationale: changes can be permanent if not removed	
Sources of information: Saltonstall, Kristin, 2005 "Common Reed" Plant Conservation Alliance, Alien Plant Working Group	
Question 1.2 Impact on plant community composition, structure, and interactions	B Other Pub. Mat'l back
Identify type of impact or alteration: Forms dense, monospecific stands. Outcompetes other marsh species (1). Native plants crowded out, leaves isolated stands of <i>Spartina</i> (2). In Palo Alto, threatening to become a monoculture and is displacing other species (3).	
Rationale: Can form a monoculture	
Sources of information: 1. Marks, Marianne, Beth Lapin, & John Randall, 1993. Element Stewardship Abstract for <i>Phragmites australis</i> " The Nature Conservancy, Arlington. Available: http://tncweeds.ucdavis.edu 2. Saltonstall, Kristin, "Common Reed" Plant Conservation Alliance, Alien Plant Working Group, 2005. Available: http://www.nps.gov/plants/alien/fact/phau1.htm 3. E-mail from Daren Anderson, City of Palo Alto	
Question 1.3 Impact on higher trophic levels	B Other Pub. Mat'l back
Identify type of impact or alteration: Altered wildlife habitat, detritus of poor quality and lower availability (1).	
Rationale:	
Sources of information: 1. Weinstein, Michael, "Phragmites australis: The Good, The Bad, The Ugly" U.S.Environmental Protection Agency, National Estuary Program, 2005. Available: http://www.epa.gov/owow/estuaries/coastlines/02aug.pdf	
Question 1.4 Impact on genetic integrity	B Other Pub. Mat'l back
Identify impacts: Possible impact on native genotypes of <i>P. australis</i> .	
Rationale: introduced genotypes replacing native	
Sources of information: Blossey, Bernd. "Replacement of Native American <i>Phragmites australis</i> by Introduced Invasive Genotypes" manuscript, Cornell University, Ithaca, New York, 2002. Available:	

http://www.invasiveplants.net/invasiveplants/phragmites/nativeandintroduced.asp	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	B Rev'd, Sci. Pub'n back
Describe role of disturbance: Increased nutrient levels, increased fresh water input, vegetation removal results in spread of <i>P. australis</i> (1).	
Rationale:	
Sources of information: Minchinton, T. E., and M. D. Bertness. 2003. Disturbance-mediated competition and the spread of <i>Phragmites australis</i> in a coastal marsh. <i>Ecological Applications</i> . 13(5): 1400-1416	
Question 2.2 Local rate of spread with no management	A Anecdotal back
Describe rate of spread: high	
Rationale: Has doubled within ten years	
Sources of information: Observation at Palo Alto Bayland by Elizabeth Lucas, California Native Plant Society - Santa Clara Chapter, conservation chair for Santa Clara county	
Question 2.3 Recent trend in total area infested within state	C Anecdotal back
Describe trend: Seen at increasing number of sites on San Francisco Bay	
Rationale:	
Sources of information: emails from wetlands managers and consultants in San Francisco Bay Area	
Question 2.4 Innate reproductive potential	A Other Pub. Mat'l back
Describe key reproductive characteristics: The plant spreads horizontally by sending out rhizome runners which can grow 10 or more feet in a single growing season if conditions are optimal. It also spreads by seed (1). Seeds are short-lived and a seed bank does not develop (2).	
Rationale:	
Sources of information: 1. Saltonstall, Kristin, 2005 "Common Reed" Plant Conservation Alliance, Alien Plant Working Group. http://www.nps.gov/plants/alien/fact/phau1.htm 2. 1. DiTomaso, J.M., and E. H. Healy. 2003. Aquatic and Riparian Weeds of the West. University of California, Agriculture and Natural Resources Publication 3421.	

Question 2.5 Potential for human-caused dispersal	A Anecdotal back
Identify dispersal mechanisms: Use in restoration projects!	
Rationale: recent proposal for project in Imperial County	
Sources of information: email from Mary Butterwick March, 2005	
Question 2.6 Potential for natural long-distance dispersal	B Other Pub. Mat'l back
Identify dispersal mechanisms: seeds are wind dispersed, may be transported by birds such as red-winged blackbirds. Often grows around moving water and seed can be moved long distance by this mechanism.	
Rationale:	
Sources of information: Marks, Marianne, Beth Lapin, & John Randall, 1993. Element Stewardship Abstract for Phragmites australis" The Nature Conservancy, Arlington DiTomaso and Healy. 2003. Aquatic and Riparian Weeds of the West. UC DANR Publ. #3421.	
Question 2.7 Other regions invaded	C Other Pub. Mat'l back
Identify other regions: Found in lower 48 states and southern Canada, it has been reported as invasive in 18 states, but not very commonly as an invasive in California. In many locations in the state it is considered native.	
Rationale:	
Sources of information: Saltonstall, Kristin, 2005 "Common Reed" Plant Conservation Alliance, Alien Plant Working Group. http://www.nps.gov/plants/alien/fact/phau1.htm DiTomaso, J.M., and E. H. Healy. 2003. Aquatic and Riparian Weeds of the West. University of California, Agriculture and Natural Resources Publication 3421.	
Question 3.1 Ecological amplitude/Range	A Other Pub. Mat'l back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Scattered in freshwater and salt marshes, riparian areas, and pond and lake margins throughout California (1). Found in estuarine systems and marshes, spreading has occurred mostly in past 10 years (2). In California, present in Del Norte, Modoc, Mendocino, Sonoma, Contra Costa, Santa Barbara, Mono, Inyo, San Bernadino, Kern, Los Angeles, San Diego, and Imperial counties (3).	
Rationale:	
Sources of information: 1. DiTomaso, J.M., and E. H. Healy. 2003. Aquatic and Riparian Weeds of the West. University of California, Agriculture and Natural Resources Publication 3421. 2. comments from managers and consultants	

3. USDA, NRCS. 2005. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Question 3.2 Distribution/Peak frequency

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Describe distribution: small percent of ecological types invaded

Rationale:

Sources of information: DiTomaso, observational

Worksheet A[back](#)

Reaches reproductive maturity in 2 years or less	Yes: 1 pt
Dense infestations produce >1,000 viable seed per square meter	No: 0 pts
Populations of this species produce seeds every year.	Yes: 1 pt
Seed production sustained over 3 or more months within a population annually	Yes: 1 pt
Seeds remain viable in soil for three or more years	No: 0 pts
Viable seed produced with <i>both</i> self-pollination and cross-pollination	Unknown: 0 pts
Has quickly spreading vegetative structures (rhizomes, roots, etc.) that may root at nodes	Yes: 1 pt
Fragments easily and fragments can become established elsewhere	Yes: 2 pts
Resprouts readily when cut, grazed, or burned	Yes: 1 pt
	7 pts 2 unknowns
	A (6+ pts)
Note any related traits: Known to cross-pollinate, but no information on selfing.	

Worksheet C - California Ecological Types

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(*sensu* Holland 1986)

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	D. presen
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
	chaparral	score
Grasslands, Vernal Pools, Meadows, and other Herb Communities	coastal prairie	score
	valley and foothill grassland	score
	Great Basin grassland	score
	vernal pool	score
	meadow and seep	D. presen
	alkali playa	score
	pebble plain	score
Bog and Marsh	bog and fen	score
	marsh and swamp	D. presen
Riparian and Bottomland	riparian forest	score
	riparian woodland	D. presen
	riparian scrub (incl. desert washes)	D. presen
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).