

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):	Potamogeton crispus L.
Synonyms:	
Common names:	curly-leaved pondweed, curled pondweed, curly pondweed
Evaluation date (mm/dd/yy):	4/6/05
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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Evaluator #2 Name/Title:	Joseph DiTomaso
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Section below for list committee use—please leave blank

List committee members:	Joe DiTomaso, Alison Stanton, Joanna Clines, Cynthia Roye, Doug Johnson
Committee review date:	7/8/05
List date:	enter text here
Re-evaluation date(s):	enter text here

General comments on this assessment:

enter text here

Table 2. Criteria, Section, and Overall Scores

<u>1.1</u>	Impact on abiotic ecosystem processes	B	Rev'd, Sci. Pub'n
<u>1.2</u>	Impact on plant community	B	Rev'd, Sci. Pub'n
<u>1.3</u>	Impact on higher trophic levels	C	Rev'd, Sci. Pub'n
<u>1.4</u>	Impact on genetic integrity	U	No Information

<p>Impact</p> <p><i>Enter four characters from Q1.1-1.4 below:</i></p> <p>BBCU</p> <p><i>Using matrix, determine score and enter below:</i></p> <p>B</p>

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

<p>Invasiveness</p> <p><i>Enter the sum total of all points for Q2.1-2.7 below:</i></p> <p>15</p> <p><i>Use matrix to determine score and enter below:</i></p> <p>B</p>
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<p>Plant Score</p> <p><i>Using matrix, determine Overall Score and Alert Status from the three section scores and enter below:</i></p> <p>Medium</p> <p>No Alert</p>

<u>3.1</u>	Ecological amplitude/Range	B	Rev'd, Sci. Pub'n
<u>3.2</u>	Distribution/Peak frequency <u>Wksht C</u>	C	Observational

<p>Distribution</p> <p><i>Using matrix, determine score and enter below:</i></p> <p>B</p>

Table 3. Documentation

<p>Question 1.1 Impact on abiotic ecosystem processes B Rev'd, Sci. Pub'n back</p>
<p>Identify ecosystem processes impacted: Dense mats impede water flow. During periods of rapid growth, can deplete nutrients. Does not form infestations as dense as <i>Myriophyllum spicatum</i> or <i>Hydrilla verticillata</i>.</p>
<p>Rationale: enter text here</p>
<p>Sources of information: Catling, P.M., and I. Dobson. 1985. The biology of Canadian weeds. 69. <i>Potamogeton crispus</i> L. Canadian Journal of Plant Sciences. 65:655-668</p>
<p>Question 1.2 Impact on plant community composition, structure, and interactions B Rev'd, Sci. Pub'n back</p>
<p>Identify type of impact or alteration: Can grow in dense stands that cover large areas of the water surface (1), but in California the stands are moderately dense.</p>
<p>Rationale: enter text here</p>
<p>Sources of information: 1. Catling, P.M., and I. Dobson. 1985. The biology of Canadian weeds. 69. <i>Potamogeton crispus</i> L. Canadian Journal of Plant Sciences. 65:655-668</p>
<p>Question 1.3 Impact on higher trophic levels C Rev'd, Sci. Pub'n back</p>
<p>Identify type of impact or alteration: Eaten by dabbling ducks and coots. Depletion of nutrients can harm fish.</p>
<p>Rationale: enter text here</p>
<p>Sources of information: Catling, P.M., and I. Dobson. 1985. The biology of Canadian weeds. 69. <i>Potamogeton crispus</i> L. Canadian Journal of Plant Sciences. 65:655-668</p>
<p>Question 1.4 Impact on genetic integrity U No Information back</p>
<p>Identify impacts: There are several native <i>Potamogeton</i> species that hybridize with each other, but as <i>P. crispus</i> reproduces mostly vegetatively, hybridization is probably not common. However, other species of <i>Potamogeton</i> are known to hybridize so it is still possible, although unknown.</p>
<p>Rationale: enter text here</p>
<p>Sources of information: Hickman, J. C. (ed.) 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, CA enter text here</p>

Question 2.1 Role of anthropogenic and natural disturbance in establishment	A Other Pub. Mat'l back
Describe role of disturbance: Can readily become established in an undisturbed aquatic system.	
Rationale: enter text here	
Sources of information: 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 2.2 Local rate of spread with no management	B Other Pub. Mat'l back
Describe rate of spread: Fast-growing plant (1). Can spread in new area.	
Rationale: enter text here	
Sources of information: 1. Moore, L. M. 2002. Plant guide: Potamogeton crispus. USDA Natural Resource Conservation Service, National Plant Data Center. Available: http://plants.usda.gov	
Question 2.3 Recent trend in total area infested within state	C Other Pub. Mat'l back
Describe trend: Already widespread in many regions of California.	
Rationale: enter text here	
Sources of information: 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 2.4 Innate reproductive potential	A Rev'd, Sci. Pub'n back
Describe key reproductive characteristics: Perennial herbaceous submerged aquatic plant. Extent of self-compatibility unknown. Develops fruit in shallow water. Each fruit produces one seed. Germination of seeds is rare. Vegetative reproduction is more common in North America. A single dominant stem apex in California produced over 900 dormant apices between June and October of the same year (1). Flowers May to September (2).	
Rationale: Not sure about some of the scores for this section.	
Sources of information: 1. Catling, P.M., and I. Dobson. 1985. The biology of Canadian weeds. 69. Potamogeton crispus L. Canadian Journal of Plant Sciences. 65:655-668	
2. 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	B Other Pub. Mat'l back
Identify dispersal mechanisms: Could be caught on boats and moved from lake to lake.	
Rationale: enter text here	
Sources of information: 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 2.6 Potential for natural long-distance dispersal	A Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: Fruits are released underwater, so dispersal is probably by water currents, and maybe waterfowl.	
Rationale: enter text here	
Sources of information: Catling, P.M., and I. Dobson. 1985. The biology of Canadian weeds. 69. Potamogeton crispus L. Canadian Journal of Plant Sciences. 65:655-668	
Question 2.7 Other regions invaded	C Rev'd, Sci. Pub'n back
Identify other regions: Native to Eurasia, Africa, and Australia. Now occurs worldwide, including throughout most of North America (1).	
Rationale: Scoring as C because it inhabits aquatic habitats only.	
Sources of information: Catling, P.M., and I. Dobson. 1985. The biology of Canadian weeds. 69. Potamogeton crispus L. Canadian Journal of Plant Sciences. 65:655-668	
Question 3.1 Ecological amplitude/Range	B Rev'd, Sci. Pub'n back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Introduced to California before 1900. Occurs in aquatic habitats such as rivers and canals. Restricted to alkaline calcareous waters and is tolerant of slightly brackish waters (1). Also inhabits ponds, lakes, and marshy areas. In California, occurs in North Coast Ranges, Central Coast, Central Valley, San Francisco Bay Region, Central and Eastern Transverse Ranges, South Coast, Channel Islands, and Mojave Desert (2).	
Rationale: enter text here	
Sources of information: Catling, P.M., and I. Dobson. 1985. The biology of Canadian weeds. 69. Potamogeton crispus L. Canadian Journal of Plant Sciences. 65:655-668	
2. 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 3.2 Distribution/Peak frequency	C Observational back
Describe distribution: enter text here	
Rationale: enter text here	
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	No: 0 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
	6 pts 1 unknown
	A (6+ pts)
Note any related traits: enter text here	

Worksheet C - California Ecological Types

[back](#)

(*sensu* Holland 1986)

Major Ecological Types	Minor Ecological Types	Code*
Marine Systems	marine systems	score
Freshwater and Estuarine Aquatic Systems	lakes, ponds, reservoirs	C. 5-20%
	rivers, streams, canals	C. 5-20%
	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
	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	score
	alkali playa	score
	pebble plain	score
Bog and Marsh	bog and fen	score
	marsh and swamp	D. present
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).