

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>Centaurea calcitrapa</i>
Synonyms:	
Common names:	Purple starthistle
Evaluation date (mm/dd/yy):	5/22/03
Evaluator #1 Name/Title:	Joe DiTomaso
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Address:	Weed Science Program, Robbins Hall, Univ. California, Davis CA 95616
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 review committee use—please leave blank

Review committee members:	Joe DiTomaso, Peter Warner, Alison Stanton, Carla Bossard, Cynthia Roye, Jake Sigg, Doug Johnson, Brianna Richardson
Committee review date:	06/06/03
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	C	Observational
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	D	Observational

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

2.1	Role of anthropogenic and natural disturbance	B 2	Other Pub. Mat'l
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	Rev'd, Sci. Pub'n
2.5	Potential for human-caused dispersal	C 1	Other Pub. Mat'l
2.6	Potential for natural long-distance dispersal	C 1	Other Pub. Mat'l
2.7	Other regions invaded	C 1	Other Pub. Mat'l

“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:
12
 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:
Medium
No Alert

3.1	Ecological amplitude	B	Observational
3.2	Distribution	C	Other Pub. Mat'l

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

Worksheet A. Complete this worksheet to answer Question 2.4.

Reaches reproductive maturity in 2 years or less	Yes: 1 pt
Dense infestations produce >1,000 viable seed per square meter	Yes: 2 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	Yes: 2 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	No: 0 pt
Fragments easily and fragments can become established elsewhere	No: 0 pts
Resprouts readily when cut, grazed, or burned	Yes: 1 pt

Total Pts 8	Total Unknowns 1
Score A	

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes
Identify ecosystem processes impacted: Probably impacts water runoff and percolation, as well as soil erosion similar to spotted knapweed, but no work has been conducted to prove this.
Rationale: Plant structure similar to spotted knapweed which increases erosion.
Sources of information: DiTomaso-Observational
Question 1.2 Impact on plant community composition, structure, and interactions
Identify type of impact or alteration: suspected of displacing native species. Doesn't form monotypic stands like yellow starthistle.
Rationale:
Sources of information: Randall, J.M. 200. <i>Centaurea calcitrapa</i> . In, Invasive Plants of California's Wildlands. CalEPPC. UC Press, Berkeley
Question 1.3 Impact on higher trophic levels
Identify type of impact or alteration: Sharp spines can discourage deer or rodent grazing, or reduce forage quality. Not palatable even in early stages of growth. In Australia, plants protect rabbits, which are also invasive.
Rationale:
Sources of information: Amme, D. 1985. <i>Fremontia</i> 13:22-23; Anonymous. 1998. Technical Bulletin. Marin Co.. Agricultural Land Trust, 2 pp.; Parsons, W.T. and E.G. Cuthbertson. 1992. Noxious Weeds of Australia. Inkata Press, Sydney
Question 1.4 Impact on genetic integrity
Identify impacts: Probably none.
Rationale: No native <i>Centaurea</i> in California
Sources of information: : DiTomaso-Observational
Question 2.1 Role of anthropogenic and natural disturbance in establishment
Describe role of disturbance: mainly in disturbed areas, but can invade annual grass dominated grasslands. Prefers heavier bottomland soils.
Rationale:
Sources of information: Amme, D. 1985. <i>Fremontia</i> 13:22-23; Randall, J.M. 200. <i>Centaurea calcitrapa</i> . In, Invasive Plants of California's Wildlands. CalEPPC. UC Press, Berkeley
Question 2.2 Local rate of spread with no management
Describe rate of spread: Spreading, but only slightly.
Rationale:
Sources of information: : DiTomaso-Observational
Question 2.3 Recent trend in total area infested within state
Describe trend: Spreading slowly, but still confined to North Coast areas. Some new reports in other areas.
Rationale:
Sources of information: : DiTomaso-Observational
Question 2.4 Innate reproductive potential
Describe key reproductive characteristics: Seed longevity unknown. Produces lots of seeds, recovers after damage.
Rationale:
Sources of information: DiTomaso, J.M. and E.A. Healy. 2005. Weeds of California. DANR (pre-print)
Question 2.5 Potential for human-caused dispersal
Identify dispersal mechanisms: Some movement by machinery, and along roadsides.
Rationale:
Sources of information: Parsons, W.T. and E.G. Cuthbertson. 1992. Noxious Weeds of Australia. Inkata Press, Sydney; Anonymous. 1998. Technical Bulletin. Marin Co.. Agricultural Land Trust, 2 pp.
Question 2.6 Potential for natural long-distance dispersal
Identify dispersal mechanisms: Some movement in water, but not typically moved very far by natural means. Also can act like a tumbleweed and disperse seed moderate distances.
Rationale:
Sources of information: Parsons, W.T. and E.G. Cuthbertson. 1992. Noxious Weeds of Australia. Inkata Press, Sydney; Randall, J.M. 200. <i>Centaurea calcitrapa</i> . In, Invasive Plants of California's Wildlands. CalEPPC. UC Press, Berkeley
Question 2.7 Other regions invaded
Identify other regions: As far north as Washington and east to Utah. Also a problem in Australia, New Zealand, the Middle East, and South Africa. Pasture and cereal crop weed in Australia.

Rationale:
Sources of information: Parsons, W.T. and E.G. Cuthbertson. 1992. Noxious Weeds of Australia. Inkata Press, Sydney; DiTomaso, J.M. and E.A. Healy. 2005. Weeds of California. DANR (pre-print)
Question 3.1 Ecological amplitude
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Primarily in grasslands, sometimes in wetter areas than yellow starthistle. Introduced near Vacaville, CA, in 1896.
Rationale:
Sources of information: Amme, D. 1985. Fremontia 13:22-23; ; DiTomaso-Observational
Question 3.2 Distribution
Describe distribution: Major infestations in Marin, Napa, Solano, and Sonoma counties, but found in other areas of the state. Mainly in grasslands.
Rationale:
Sources of information: Woods, D.M., D.A. Mayhew and J.M. Gendron. 2000. CDFA Biological Control Program 1999. pp. 78-79

Complete the worksheet that corresponds to your state using the letter codes and instructions in Section 3.

Worksheet C - California Ecological Types

(*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	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	C. 5-20%
	valley and foothill grassland	D. present
	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	score
Riparian and Bottomland	riparian forest	score
	riparian woodland	score
	riparian scrub (incl. desert washes)	score
Woodland	cismontane woodland	D. present
	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).