

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):	Descurania sophia L.
Synonyms:	Arabis sophia, Sisymbrium sophia
Common names:	flixweed, tansy mustard
Evaluation date (mm/dd/yy):	3/9/2004
Evaluator #1 Name/Title:	Matt Brooks/Research Botanist
Affiliation:	U.S. Geological Survey
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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:	Carla Bossard, Joe DiTomaso, John Randall, Cynthia Roye, Jake Sigg, Alison Stanton, Peter Warner
Committee review date:	03/19/04
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	C	Observational
1.3	Impact on higher trophic levels	U	No Information
1.4	Impact on genetic integrity	U	No Information

“Impact”
 Enter four characters from Q1.1-1.4 below:
CCUU
 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	C 1	Observational
2.3	Recent trend in total area infested within state	C 1	Other Pub. Mat'l
2.4	Innate reproductive potential	A 3	Observational
2.5	Potential for human-caused dispersal	A 3	Observational
2.6	Potential for natural long-distance dispersal	C 1	Observational
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:
Low
No Alert

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

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

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes
Identify ecosystem processes impacted: C. Possibly fire regimes
Rationale: May increase fuel loads, but only where alien annual grasses have already altered the fire regime, so additional effect of this species may be only to slightly increase fire intensity.
Sources of information: Matt Brooks personal observation
Question 1.2 Impact on plant community composition, structure, and interactions
Identify type of impact or alteration: B. May reduce biomass and fecundity of co-existing species, but does not seem to reach numbers that completely exclude other species.
Rationale: Focused on early successional stages, and often co-exists with cheatgrass (<i>Bromus tectorum</i>).
Sources of information: Howard, J.L. 2003. <i>Descurania sophia</i> . In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/ .
Question 1.3 Impact on higher trophic levels
Identify type of impact or alteration: U: Unknown
Rationale: There is some indication that the Oxalic acids in mustard eaten by Desert Tortoise (<i>Gopherus agassizii</i>) may have negative physiological effect, but this is only conjecture at this point.
Sources of information: Kristin Berry, personal communication

Question 1.4 Impact on genetic integrity
Identify impacts: U. But potential effects on the closely related native species, <i>Descurania pinnata</i> .
Rationale: Often coexists with the native congener.
Sources of information: Matt Brooks personal observation.
Question 2.1 Role of anthropogenic and natural disturbance in establishment
Describe role of disturbance: B. Disturbance promotes dominance and spread.
Rationale: Early successional species, which may decline in dominance as native species re-establish, but likely varies among vegetation types. It may persist indefinitely in riparian areas with repeated natural disturbance.
Sources of information: Matt Brooks personal observation
Question 2.2 Local rate of spread with no management
Describe rate of spread: C. Slow unless there is disturbance.
Rationale: occurs in habitat openings caused by natural disturbances, roads, urban developments, agricultural fields, etc.
Sources of information: Matt Brooks personal observation
Question 2.3 Recent trend in total area infested within state
Describe trend: C. Probably constant
Rationale: It has been around since the 1800s, and was widespread in the intermountain region by 1920
Sources of information: Pyke, David A. 2000. Invasive exotic plants in sagebrush ecosystems of the Intermountain West. In: Entwistle, P. G.; DeBolt, A. M.; Kaltenecker, J. H.; Steenhof, K., compilers. Sagebrush steppe ecosystems symposium: Proceedings; 1999 June 21-23; Boise, ID. Publ. No. BLM/ID/PT-001001+1150. Boise, ID: U.S. Department of the Interior, Bureau of Land Management, Boise State Office: 43-44.
Question 2.4 Innate reproductive potential
Describe key reproductive characteristics: A. High
Rationale: Individual plants may produce up to 700,000 seeds.

Sources of information: For seed production see Salisbury. E.J. 1961. Weeds and Aliens. Macmillan Co., New York. 330pp, otherwise, Matt Brooks personal observation
Question 2.5 Potential for human-caused dispersal
Identify dispersal mechanisms: A. High
Rationale: Mustard seeds are sticky when wet facilitating dispersal on vehicles and grow in hay fields where they may be dispersed along with the hay when it is sold
Sources of information: Matt Brooks personal observation
Question 2.6 Potential for natural long-distance dispersal
Identify dispersal mechanisms: C. Low
Rationale: Likely dispersed by saltation or rodents.
Sources of information: Matt Brooks personal observation
Question 2.7 Other regions invaded
Identify other regions: C. Unknown, but likely semi-arid to mesic ecosystems worldwide
Rationale: also found in similar ecosystems in South America, Asia, southern Africa, and New Zealand
Sources of information: Howard, J.L. 2003. <i>Descurania sophia</i> . In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/ .
Question 3.1 Ecological amplitude
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: A. Widespread
Rationale: has invaded shrublands, grasslands, woodlands, and riparian areas
Sources of information: Hickman, 1993. The Jepson Manual, Higher Plant of California. U.C. Press. and Matt Brooks personal observation
Question 3.2 Distribution
Describe distribution: C

Rationale: moderately abundant in coast scrub and Great Basin scrub

Sources of information: Matt Brooks personal observation

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	No: 0 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	No: 0 pt
	6 pts 1 unknown
	A (6+ pts)
Note any related traits: enter text here	

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	D. present
	coastal scrub	C. 5-20%
	Sonoran desert scrub	D. present
	Mojavean desert scrub (incl. Joshua tree woodland)	D. present
	Great Basin scrub	C. 5-20%
	chenopod scrub	D. present
	montane dwarf scrub	score
	Upper Sonoran subshrub scrub	D. present
Grasslands, Vernal Pools, Meadows, and other Herb Communities	coastal prairie	D. present
	valley and foothill grassland	D. present
	Great Basin grassland	D. present
	vernal pool	D. present
	meadow and seep	D. present
	alkali playa	D. present
	pebble plain	score
Bog and Marsh	bog and fen	score
	marsh and swamp	score
Riparian and Bottomland	riparian forest	score
	riparian woodland	D. present
	riparian scrub (incl. desert washes)	D. present
Woodland	cismontane woodland	D. present
	piñon and juniper woodland	D. present
	Sonoran thorn woodland	D. present
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).