

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):	Sinapis arvensis L.
Synonyms:	Brassica arvensis, Brassica kaber
Common names:	wild mustard, canola, charlock mustard, common mustard, crunch-weed, field kale, field mustard, kedlock, rapeseed
Evaluation date (mm/dd/yy):	3/22/05
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Section below for list committee use—please leave blank

List committee members:	Joe DiTomaso, 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

1.1	Impact on abiotic ecosystem processes	U	No Information
1.2	Impact on plant community	C	Rev'd, Sci. Pub'n
1.3	Impact on higher trophic levels	D	Other Pub. Mat'l
1.4	Impact on genetic integrity	D	Rev'd, Sci. Pub'n

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

2.1	Role of anthropogenic and natural disturbance	C (1 pt)	Other Pub. Mat'l
2.2	Local rate of spread with no management	C (1 pt)	Observational
2.3	Recent trend in total area infested within state	C (1 pt)	Other Pub. Mat'l
2.4	Innate reproductive potential Wksht A	A (3 pts)	Rev'd, Sci. Pub'n
2.5	Potential for human-caused dispersal	C (1 pt)	Other Pub. Mat'l
2.6	Potential for natural long-distance dispersal	D (0 pts)	Other Pub. Mat'l
2.7	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>8</p> <p><i>Use matrix to determine score and enter below:</i></p> <p>C</p>

<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>Low</p> <p>No Alert</p>
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3.1	Ecological amplitude/Range	C	Other Pub. Mat'l
3.2	Distribution/Peak frequency Wksht C	D	Observational

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

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	U No Information back
Identify ecosystem processes impacted:	
Rationale: enter text here	
Sources of information: enter text here	
Question 1.2 Impact on plant community composition, structure, and interactions	C Rev'd, Sci. Pub'n back
Identify type of impact or alteration: Described as highly invasive (1), but most references list it in heavily disturbed areas such as roadsides or crops rather than in wildlands. One of many non-native species that invades grasslands that are habitat for the federally threatened San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>) (2).	
Rationale: enter text here	
Sources of information: 1. Warwick, S. I., H. J. Beckie, et al. 2000 The biology of Canadian weeds. 8. <i>Sinapis arvensis</i> . L. (updated). Canadian Journal of Plant Science 80(4): 939-961. 2. US Fish and Wildlife Service. updated 2002. Species account for San Joaquin adobe sunburst. Sacramento Fish and Wildlife Office. Accessed on-line: http://www.fws.gov/pacific/sacramento/es/plant_spp_accts/san_joaquin_adobe_sunburst.htm	
Question 1.3 Impact on higher trophic levels	D Other Pub. Mat'l back
Identify type of impact or alteration: Seeds contain toxic chemicals and in large quantities can be fatally toxic to livestock (1). However, it's unpalatable, so animals probably won't eat large quantities (2).	
Rationale: enter text here	
Sources of information: 1. DiTomaso, J., and E. Healy. Weeds of California and Other Western States. in prep. 2. Warwick, S. I., H. J. Beckie, et al. 2000 The biology of Canadian weeds. 8. <i>Sinapis arvensis</i> . L. (updated). Canadian Journal of Plant Science 80(4): 939-961.	
Question 1.4 Impact on genetic integrity	D Rev'd, Sci. Pub'n back
Identify impacts: None	
Rationale: No native <i>Sinapis</i> species in California (1). <i>S. arvensis</i> is not known to produce interspecific hybrids (2).	
Sources of information: Hickman, J. C. (ed.) 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, CA 2. Warwick, S. I., H. J. Beckie, et al. 2000) The biology of Canadian weeds. 8. <i>Sinapis arvensis</i> . L. (updated).	

Canadian Journal of Plant Science 80(4): 939-961.	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	C Other Pub. Mat'l back
Describe role of disturbance: Inhabits disturbed areas: roadsides, fields, ditch banks, dry washes, clearings, river banks (1, 2).	
Rationale: enter text here	
Sources of information: 1. DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488. 2. Warwick et al. in prep.	
Question 2.2 Local rate of spread with no management	C Observational back
Describe rate of spread: Does not spread much, if at all, in natural or wildland areas.	
Rationale: enter text here	
Sources of information: DiTomaso, observational.	
Question 2.3 Recent trend in total area infested within state	C Other Pub. Mat'l back
Describe trend: Present throughout California (1) so total area infested probably not increasing, or at least not much.	
Rationale: enter text here	
Sources of information: 1. DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488.	
Question 2.4 Innate reproductive potential	A Rev'd, Sci. Pub'n back
Describe key reproductive characteristics: Winter or summer annual. Mostly self-incompatible. Flowers February to May, occasionally to October (1). Has an indeterminate growth habit and continues to produce mature seed pods until frost. Maximum viable seed production in one study was 3300/ square m (2). Has a long-lived seed bank (1,2,3).	
Rationale: enter text here	
Sources of information: 1. DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488. 2. Warwick, S. I., H. J. Beckie, et al. 2000. The biology of Canadian weeds. 8. <i>Sinapis arvensis</i> . L. (updated). Canadian Journal of Plant Science 80(4): 939-961 3. Lutman, P. J. W., G. W. Cussans, et al. 2002. The persistence of seeds of 16 weed species over six years in two arable fields. Weed Research 42(3): 231-241..	

Question 2.5 Potential for human-caused dispersal	C Other Pub. Mat'l back
Identify dispersal mechanisms: Seeds can be dispersed by agricultural activities and as contaminants of seed and feed (1).	
Rationale: enter text here	
Sources of information: 1. DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488..	
Question 2.6 Potential for natural long-distance dispersal	D Other Pub. Mat'l back
Identify dispersal mechanisms: Seeds fall near parent plant or disperse longer distances with water or mud, but these would rarely happen (1).	
Rationale: enter text here	
Sources of information: 1. DiTomaso and Healy in prep.	
Question 2.7 Other regions invaded	C Rev'd, Sci. Pub'n back
Identify other regions: Native to Europe. Present all over the world from coastal to montane areas up to 1800m, in disturbed sites (1).	
Rationale: Scoring as C because already widespread in California.	
Sources of information: 1. Warwick et al. 2000	
Question 3.1 Ecological amplitude/Range	C Other Pub. Mat'l back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Present throughout California, except deserts and Great Basin, to 500m (1). Not common in wildland or natural communities.	
Rationale: enter text here	
Sources of information: 1. DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488.	
Question 3.2 Distribution/Peak frequency	D Observational back
Describe distribution: Very infrequent in wildlands. Mainly associated with roadsides or agricultural areas.	
Rationale: enter text here	

Sources of information: DiTomaso, observational.

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

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	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	D. presen
	valley and foothill grassland	D. presen
	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	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).