

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):	Avena barbata L.
Synonyms:	
Common names:	slender oat
Evaluation date (mm/dd/yy):	12/27/04
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
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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, John Randall, Cynthia Roye, Jake Sigg, Peter Warner
Committee review date:	2/11/05
List date:	enter text here
Re-evaluation date(s):	enter text here

General comments on this assessment:

Many papers describe *A. barbata* and *A. fatua* together. There is much less specific information on *A. barbata*, so many of my answers assume that it is similar to *A. fatua*.

Table 2. Criteria, Section, and Overall Scores

1.1	Impact on abiotic ecosystem processes	B	Rev'd, Sci. Pub'n
1.2	Impact on plant community	A	Rev'd, Sci. Pub'n
1.3	Impact on higher trophic levels	C	Pers. Obs.
1.4	Impact on genetic integrity	D	Rev'd, Sci. Pub'n

Impact

Enter four characters from Q1.1-1.4 below:

BACB

Using matrix, determine score and enter below:

B

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

Invasiveness

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 Overall Score and Alert Status from the three section scores and enter below:

B

No alert

3.1	Ecological amplitude/Range	A	Rev'd, Sci. Pub'n
3.2	Distribution/Peak frequency Wksht C	A	Doc'n level

Distribution

Using matrix, determine score and enter below:

A

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	B Rev'd Sci. Pub'n back
Identify ecosystem processes impacted: Replacement of perennial grasslands with annuals like Avena increases fire frequencies.	
Rationale:	
Sources of information: D'Antonio, C. and P. Vitousek. 1992. Biological invasions by exotic grasses, the grass/fire cycle, and global change. Annual Review of Ecology and Systematics. 23:63-87	
Question 1.2 Impact on plant community composition, structure, and interactions	A Rev'd, Sci. Pub'n back
Identify type of impact or alteration: Outcompete other grasses (1). Allelopathic (2). Forms extensive, fibrous root system (3,4).	
Rationale: "Wild oats are renowned for their competitive ability" (1).	
Sources of information: 1. Medd, R. W. 1996. Wild oats-what is the problem? Plant Protection Quarterly 11(SUPPL. 1): 183-184	
2. Sharma, M. P. and W. H. Vanden Born 1978. The Biology of Canadian Weeds Part 27 Avena-Fatua. Canadian Journal of Plant Science 58(1): 141-158	
3. DiTomaso, J.,and E. Healy. Weeds of California and Other Western States. in prep.	
4. Holm, L. G., D. L. Plunkett, J. V. Pancho, and J. P. Herberger. 1977. The World's Worst Weeds. pg 96-103	
Question 1.3 Impact on higher trophic levels	C Pers. Obs. back
Identify type of impact or alteration: Has both positive and negative impacts.	
Rationale: enter text here	
Sources of information: Weed committee personal observations.	
Question 1.4 Impact on genetic integrity	D Rev'd, Sci. Pub'n back
Identify impacts: none	
Rationale: No native Avena species.	
Sources of information: Hickman, J. C. (ed.) 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, CA enter text here	

Question 2.1 Role of anthropogenic and natural disturbance in establishment	B Rev'd, Sci. Pub'n back
Describe role of disturbance: Needs disturbance to establish. Often associated with agricultural fields.	
Rationale: In Canada, virtually absent from land that has not been recently disturbed. Common in pastures and along roadsides (1), and on "neglected land" (2). (Based on information for <i>Avena fatua</i>).	
Sources of information: 1. Sharma, M. P. and W. H. Vanden Born. 1978. The Biology of Canadian Weeds Part 27 <i>Avena-Fatua</i> . Canadian Journal of Plant Sciences. 58:141-157 2. Holm, L. G., D. L. Plunckett, J. V. Pancho, and J. P. Herberger. 1977. The World's Worst Weeds. pg 96-103.	
Question 2.2 Local rate of spread with no management	C Pers. Obs. back
Describe rate of spread: Well-established, so currently not spreading much.	
Rationale: enter text here	
Sources of information: enter text here	
Question 2.3 Recent trend in total area infested within state	C Other Publ back
Describe trend: Well-established throughout California, so probably not spreading very much.	
Rationale: "Nearly ubiquitous in California" (1)	
Sources of information: 1. DiTomaso and Healy. In prep.	
Question 2.4 Innate reproductive potential	A Rev'd, Sci. Pub'n back
Describe key reproductive characteristics: Cool-season annual grass. In California, seeds germinate after first significant rain in the fall, until early spring. Flowers March-June. Wind-pollinated and self-compatible (1). Buried seeds often remain dormant until exposed by cultivation or other disturbance (1). In Malta, only a few viable but dormant seeds were present at the end of three years (2). Produce 1000 to 10,000 seeds/m ² (4). Requires cold for floral induction, more so than <i>A. fatua</i> (5).	
Rationale: enter text here	
Sources of information: 1. DiTomaso and Healy in prep 2. Holm et al. 1997 4. Medd 1996 5. Paterson, J. G., W. J. R. Boyd, and N. A. Goodchild. 1976. Vernalization and photoperiod requirement of naturalized <i>Avena-Fatua</i> and <i>Avena-Barbata</i> in western Australia. Journal of Applied Ecology 13(1): 265-272	

Question 2.5 Potential for human-caused dispersal	A Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: Contaminant of grain, spread by agricultural machinery (1). Often contaminates seeds stocks in U.S. (2)	
Rationale: enter text here	
Sources of information: 1. Medd, R. W. 1996. Wild oats-what is the problem? Plant Protection Quarterly 11(SUPPL. 1): 183-184. 2. Holm et al. 1997	
Question 2.6 Potential for natural long-distance dispersal	D Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: Possibly wind, but unlikely	
Rationale: Wild oats have no adaptations to aid long distance dispersal, and under natural conditions most seeds probably fall within 1m of origin (1)	
Sources of information: 1. Medd, R. W. 1996. Wild oats-what is the problem? Plant Protection Quarterly 11(SUPPL. 1): 183-184.	
Question 2.7 Other regions invaded	score Rev'd, Sci. Pub'n back
Identify other regions: OR, WA, NV, AZ, NM, MA (1). Argentina, Australia, Chile, France, Greece, Hawaii, India, Israel, Lebanon, Malta, Portugal, South Africa, Uruguay (2). In Australia, prefers cooler areas with more rainfall compared to <i>A. fatua</i> (3) .	
Rationale: enter text here	
Sources of information: 1. DiTomaso and Healy 1997 2. Holm et al. 1997 3. Paterson, J. G. 1976. The distribution of <i>Avena</i> -Spp naturalized in Western Australia. Journal of Applied Ecology 13(1): 257-264.	
Question 3.1 Ecological amplitude/Range	A Rev'd, Sci. Pub'n back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: May have arrived with contaminated grain (1). Planted for forage and well-established by late 1700's (2).	
Rationale: enter text here	
Sources of information: 1. Sharma and Vanden born 1978 2. DiTomaso and Healy in prep.	

Question 3.2 Distribution/Peak frequency	A Doc'n level back
Describe distribution: "Ubiquitous"	
Rationale: Scored as A because so widespread	
Sources of information: DiTomaso and Healy in prep	

Worksheet A[back](#)

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	No: 0 pts
Viable seed produced with <i>both</i> self-pollination and cross-pollination	Yes: 1 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	D. present
	desert	score
	interior	score
Scrub and Chaparral	coastal bluff scrub	score
	coastal scrub	B
	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	D. present
Grasslands, Vernal Pools, Meadows, and other Herb Communities	coastal prairie	B
	valley and foothill grassland	D. present
	Great Basin grassland	D. present
	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	D. present
	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).