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)**:**	Schismus arabicus, Schismus barbatus
Synonyms:	
Common names:	Mediterraneangrass, split-grass, schismus, Arabian Mediterranean grass
Evaluation date (mm/dd/yy)**:**	9/4/2003
Evaluator #1 Name/Title:	Matt Brooks/Reearch Botanist
Affiliation:	U.S. Geological Surveye
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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:	Matt Brooks, Doug Johnson, Joe DiTomaso, Peter Warner
Committee review date:	9/4/2003
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	**B**	**Rev'd, Sci. Pub'n**
1.2	Impact on plant community	**B**	**Rev'd, Sci. Pub'n**
1.3	Impact on higher trophic levels	**C**	**Other Pub. Mat'l**
1.4	Impact on genetic integrity	**U**	**No Information**

"Impact"

Enter four characters from Q1.1-1.4 below:

BBCU

Use matrix determine the score; enter below:

B

2.1	Role of anthropogenic and natural disturbance	**B 2**	**Rev'd, Sci. Pub'n**
2.2	Local rate of spread with no management	**A 3**	**Other Pub. Mat'l**
2.3	Recent trend in total area infested within state	**C 1**	**Observational**
2.4	Innate reproductive potential	**B 2**	**Observational**
2.5	Potential for human-caused dispersal	**U 0**	**No Information**
2.6	Potential for natural long-distance dispersal	**C 1**	**Observational**
2.7	Other regions invaded	**C 1**	**Observational**

"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:

10

Use matrix to determine score and enter below:

C

3.1	Ecological amplitude	**A**	**Observational**
3.2	Distribution	**A**	**Observational**

"Distribution"

Use matrix determine the score; enter below:

A

"Plant Score"

Using matrix, determine the Overall Score and Alert Status from the three section scores and enter them below:

Low

No Alert

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes
Identify ecosystem processes impacted: B: Possibly fire frequency in arid and semi-arid shrublands
Rationale: Produces high amounts of continuous fine fuels were they did not previously exist, facilitating the spread of fire where fire is historically infrequent.
Sources of information: Brooks, M.L. 1999a. Alien annual grasses and fire in the Mojave Desert. Madroño 46:13-19, enter text here
Question 1.2 Impact on plant community composition, structure, and interactions
Identify type of impact or alteration: B: May reduce vigor, fecundity, and species diveristy of native annual plant communities.
Rationale: Can compete with native annual plants, reducing the biomass and species richness of seedling cohorts. Can have high % cover, but usually only after disturbances such as fire. When it arrived in the early 1900s, the similar native annual grass, Vulpia octoflora, declined in abundance.
Sources of information: Brooks, M.L. 2000. Competition between alien annual grasses and native annual plants in the Mojave Desert. American Midland Naturalist 144:92-108. Brooks, M.L. 2000a. Schismus arabicus Nees. Schismus barbatus (L.) Thell. In: Bossard, C., Hoshovsky, M. and Randall, J. (Eds.). Invasive Wildland Weeds of California. Berkeley: University of California Press, pp. 287-291. Brooks, M.L. and D. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pp. 1-14 In K. Galley and T. Wilson (eds.), Proceedings of the Invasive Species Workshop: The Role of Fire In the Control and Spread of Invasive Species. Fire Conference 2000: The First National Congress on Fire, Ecology, Prevention and Management. Miscellaneous Publications No. 11, Tall Timbers Research Station, Tallahassee, Florida, USA. Brooks, M.L., and T.C. Esque. 2002. Alien annual plants and wildfire in desert tortoise habitat: status, ecological effects, and management. Chelonian Conservation and Biology 4:330-340.
Question 1.3 Impact on higher trophic levels
Identify type of impact or alteration: C: Competes with native annual plants that are preferred forage for the desert tortoise. Seeds may be eaten by small native ants, since they are collected by then and deposited around ant mounds. Seeds are probably too small to be used by vertebrate granivores. Mature plants oberved grazed by unknown animals (not livestock since they have been observed grazed in areas closed to livestock use.
Rationale: enter text here
Sources of information: Brooks, M.L., and T.C. Esque. 2002. Alien annual plants and wildfire in desert tortoise habitat: status, ecological effects, and management. Chelonian Conservation and Biology 4:330-340. Brooks, M.L. and D. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pp. 1-14 In K. Galley and T. Wilson (eds.), Proceedings of the Invasive Species Workshop: The Role of Fire In the Control and Spread of Invasive Species. Fire Conference 2000: The First National Congress on Fire, Ecology, Prevention and Management. Miscellaneous Publications No. 11, Tall Timbers Research Station, Tallahassee, Florida, USABrooks, M.L. 2000. Competition between alien annual grasses and native annual plants in the Mojave

Desert. American Midland Naturalist 144:92-108.

Question 1.4 Impact on genetic integrity
Identify impacts: U: unknown, no native congeners in California
Rationale: enter text here
Sources of information: Hickman, J.C. (ed.). 1993. The Jepson Manual: Higher plants of California. University of California Press, Berkeley, CA. 1400 p.
Question 2.1 Role of anthropogenic and natural disturbance in establishment
Describe role of disturbance: B: Anthropogenic disturbance facilitates dominance of this species, in biomass and cover continuity.
Rationale: Very high cover in areas disturbed by OHVs, fire, and previous cropping agriculture.
Sources of information: Brooks, M.L. 2000. Schismus arabicus Nees. Schismus barbatus (L.) Thell. In: Bossard, C., Hoshovsky, M. and Randall, J. (Eds.). Noxious Wildland Weeds of California. Berkeley: University of California Press, pp. 287-291. Brooks, M.L. 2000. Competition between alien annual grasses and native annual plants in the Mojave Desert. American Midland Naturalist 144:92-108. Brooks, M.L., and T.C. Esque. 2002. Alien annual plants and wildfire in desert tortoise habitat: status, ecological effects, and management. Chelonian Conservation and Biology 4:330-340. Brooks, M.L. and D. Pyke. 2001. The role of firein the deserts of North America. Pp. 1-14 In K. Galley and T. Wilson (eds.), Proceedings of the Invasive Species Workshop: The Role of Fire In the Control and Spread of Invasive Species. Fire Conference 2000: The First National Congress on Fire, Ecology, Prevention and Management. Miscellaneous Publications No. 11, Tall Timbers Research Station, Tallahassee, Florida, USA. Brooks, 1999. Biological Invasions
Question 2.2 Local rate of spread with no management
Describe rate of spread: A: probably can spread rapidly.
Rationale: Years of high rainfall produce huge increases in cover and biomass dominance. Can disperse locally by "tumbleweed" action.
Sources of information: Brooks, M.L. 2000a. Schismus arabicus Nees. Schismus barbatus (L.) Thell. In: Bossard, C., Hoshovsky, M. and Randall, J. (Eds.). Noxious Wildland Weeds of California. Berkeley: University of California Press, pp. 287-291. Brooks, M.L., and T.C. Esque. 2002. Alien annual plants and wildfire in desert tortoise habitat: status, ecological effects, and management. Chelonian Conservation and Biology 4:330-340.
Question 2.3 Recent trend in total area infested within state
Describe trend: C: May still be spreading since it first appeared in the 1900s, however has likely already naturalized in most habitats where it is likely to end up

Rationale: enter text here
Sources of information: Brooks, M.L. 2000a. Schismus arabicus Nees. Schismus barbatus (L.) Thell. In: Bossard, C., Hoshovsky, M. and Randall, J. (Eds.). Noxious Wildland Weeds of California. Berkeley: University of California Press, pp. 287-291. Brooks, M.L., and T.C. Esque. 2002. Alien annual plants and wildfire in desert tortoise habitat: status, ecological effects, and management. Chelonian Conservation and Biology 4:330-340.
Question 2.4 Innate reproductive potential
Describe key reproductive characteristics: B: reproductive maturity in <2 years, high seed production
Rationale: enter text here
Sources of information: Matt Brooks personal observation
Question 2.5 Potential for human-caused dispersal
Identify dispersal mechanisms: U: may pass through the guts of livestock
Rationale: enter text here
Sources of information: no information
Question 2.6 Potential for natural long-distance dispersal
Identify dispersal mechanisms: C: Probably low, moderate-distance dispersal by saltation/tubleweed action
Rationale: enter text here
Sources of information: Matt Brooks personal observation
Question 2.7 Other regions invaded
Identify other regions: C: has invaded similar arid/semi-arid systems in Autralia, W Europe, South America
Rationale: Has invaded similar habitats in NA as elsewhere
Sources of information: Bor, N.L. 1968. Schismus in Townsend, Guest, and Al-Rawi. Flora of Iraq. Volume 9. Ministry of Agriculture of Republic of Iraq, Baghdad, Iraq.
Question 3.1 Ecological amplitude
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: A: Present in dunes, scrub, grasslands, and woodlands

Rationale: enter text here
Sources of information: Matt Brooks pers. obs.
Question 3.2 Distribution
Describe distribution: A: widespread in most low elevation desert habitats, and many sage scrub habitats
Rationale: enter text here
Sources of information: Matt Brooks pers. obs

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	**Unknown: 0 pts**
Viable seed produced with *both* 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**
	4 pts 2 unknowns
	B (4-5 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	**D. presen**
	interior	**score**
Scrub and Chaparral	coastal bluff scrub	**score**
	coastal scrub	**B. 21-50%**
	Sonoran desert scrub	**A. >50%**
	Mojavean desert scrub (incl. Joshua tree woodland)	**A. >50%**
	Great Basin scrub	**D. presen**
	chenopod scrub	**A. >50%**
	montane dwarf scrub	**score**
	Upper Sonoran subshrub scrub	**B. 21-50%**
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	**D. presen**
	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	**D. presen**
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).