

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):	Stipa capensis
Synonyms:	Achnatum capense
Common names:	cape ricegrass
Evaluation date (mm/dd/yy):	3/24/05
Evaluator #1 Name/Title:	Elizabeth Brusati, project manager
Affiliation:	California Invasive Plant Council
Phone numbers:	510-843-3902
Email address:	edbrusati@cal-ipc.org
Address:	1442A Walnut St. #462, Berkeley, CA 94709
Evaluator #2 Name/Title:	Joseph M. DiTomaso
Affiliation:	University of California, Davis
Phone numbers:	530-754-8715
Email address:	jmditomaso@ucdavis.edu
Address:	Dept. Plant Sci., Mail Stop 4, Davis, CA 95616

Section below for list committee use—please leave blank

List committee members:	Jake Sigg, Peter Warner, Bob Case, John Knapp, Elizabeth Brusati
Committee review date:	7/8/05
List date:	enter text here
Re-evaluation date(s):	enter text here

General comments on this assessment:

Richard Minnich and Andrew Sanders wrote a short review of *Stipa capensis* for us, the only information we have from California.

Table 2. Criteria, Section, and Overall Scores

<u>1.1</u>	Impact on abiotic ecosystem processes	B	Observational
<u>1.2</u>	Impact on plant community	B	Observational
<u>1.3</u>	Impact on higher trophic levels	C	Observational
<u>1.4</u>	Impact on genetic integrity	U	No Information

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

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

<p>Invasiveness</p> <p><i>Enter the sum total of all points for Q2.1-2.7 below:</i></p> <p>12</p> <p><i>Use matrix to determine score and enter below:</i></p> <p>B</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>Medium</p> <p>Red Alert</p>
--

<u>3.1</u>	Ecological amplitude/Range	D	Observational
<u>3.2</u>	Distribution/Peak frequency <u>Wksht C</u>	D	Anecdotal

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

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	B Observational back
Identify ecosystem processes impacted: Increased fire danger.	
Rationale: In the future, <i>Stipa capensis</i> may present an enormous fire hazard to desert ecosystems, possibly a greater threat than <i>Bromus rubens</i> . In 2001 during protracted drought, a fire carried largely by a solid sheet of <i>S. capensis</i> spread over 400 ha of the north-facing slope adjoining Chino Canyon. This trend is alarming because it appears that <i>S. capensis</i> can survive drought better than <i>Bromus rubens</i> , the primary invasive fuel responsible for fires in California deserts since the late 1970s (1, 2).	
Sources of information: 1. Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, CA 2. Richard A. Minnich, Department of Earth Sciences, University of California, Riverside, CA	
Question 1.2 Impact on plant community composition, structure, and interactions	B Observational back
Identify type of impact or alteration: Reduces native wildflower abundance.	
Rationale: The desert wildflower season in southern California in 2005 is possibly the best living memory. Most areas are dominated by native forbs in sufficient abundance to make color on hillslopes at a distance. However, at Chino Canyon the dense stands of <i>S. Capensis</i> had few native wildflowers.	
Sources of information: 1. Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, CA 2. Richard A. Minnich, Department of Earth Sciences, University of California, Riverside, CA	
Question 1.3 Impact on higher trophic levels	C Other Pub. Mat'l back
Identify type of impact or alteration: Conversion of scrub to grass must have an effect on wildlife, although no formal studies have been conducted.	
Rationale: enter text here	
Sources of information: Jake Sigg and Bob Case, California Native Plant Society, pers. obs. John Knapp, Catalina Island Conservancy, Pers. obs.	
Question 1.4 Impact on genetic integrity	U No Information back
Identify impacts: enter text here	
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 enter text here	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	B Observational back
Describe role of disturbance: Seems to prefer a disturbance, but can move into undisturbed desert communities.	
Rationale: enter text here	
Sources of information: Minnich and Sanders, observational	
Question 2.2 Local rate of spread with no management	A Observational back
Describe rate of spread: Based on information in Chino Hills.	
Rationale: enter text here	
Sources of information: Richard Minnich and Andy Sanders, observational.	
Question 2.3 Recent trend in total area infested within state	B Observational back
Describe trend: <i>Stipa capensis</i> was discovered in California by Andrew Sanders in 1995 (March 11) at Chino Canyon at 985 feet elevation below the Palm Springs Aerial Tramway (first collection in the United States). It has since expanded across the northern Coachella Valley near Palm Springs. It was collected in 1997 at Cathedral City, at the border with Rancho Mirage (Sanders, March 11) and south of Chino Canyon at 1150 feet (Sanders, March 18). It was collected again at Chino Canyon at 1200 feet (April 15, 2000) and in Cathedral Canyon at 500 feet (April 2 2003) (1). In 2005, Minnich observed extensive cover of <i>S. capensis</i> 10-30 cm tall on the Chino Canyon alluvial fan and on an adjacent north-facing slope at the base of the San Jacinto Mountain below 1200 feet (2).	
Rationale: enter text here	
Sources of information: 1. Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, CA 2. Richard A. Minnich, Department of Earth Sciences, University of California, Riverside, CA	
Question 2.4 Innate reproductive potential	C Rev'd, Sci. Pub'n back
Describe key reproductive characteristics: Annual grass. Germination is usually after the first rains in October or November, and flowering begins in March or April. The spear-like grain is armed with a sharp callus and a long spiral awn, which assist soil penetration following wind dispersal of the seeds (Kadman 1990). Like most annuals, <i>S. capensis</i> also invests most photosynthate into reproduction rather than foliar growth. Aronson et al. (1990) found Desert populations of <i>S. capensis</i> exhibited greater reproductive effort (ratio of diaspores to vegetative biomass) than populations in mediterranean scrub.	
Stipa capensis abundance is influenced by shrubs, similar to that in California deserts. Sarig et al. (1994) found that the canopy of scattered perennial shrubs in desert regions may support the growth of annual herbaceous grasses. However, in halophyte environments the high amounts of salt deteriorates the beneficial environment.	

The production of <i>Stipa capensis</i> , under the canopy of <i>H. scoparia</i> exceeded the amount it produced in the open interspace.	
Rationale:	
Sources of information: Kadmon, R.; Shmida, A. 1990. Spatiotemporal demographic processes in plant populations, an approach and a case study. <i>American Naturalist</i> . 135(3) 382-397. Aronson, J.A., J. Kigel, and A. Shmida. Comparative plant sizes and reproductive strategies in desert and Mediterranean populations of ephemeral plants. <i>Israel Journal of Botany Basic & Applied Sciences</i> 39: 413-430. Sarig, S., B. Barness, and Y. Steinberger. Annual plant growth and soil characteristics under desert halophyte canopy. <i>Acta Oecologica</i> 15: 521-527.	
Question 2.5 Potential for human-caused dispersal	C Anecdotal back
Identify dispersal mechanisms: Not sold much in the nursery industry. Not much opportunity to move through human means, except to be stuck on equipment and clothing.	
Rationale: enter text here	
Sources of information: enter text here	
Question 2.6 Potential for natural long-distance dispersal	B Other Pub. Mat'l back
Identify dispersal mechanisms: Fruit designed to be dispersed by attaching to the fur of animals. It appears to have been introduced with cattle from South America.	
Rationale: enter text here	
Sources of information: DiTomaso and Healy. 2006. Weeds of California. UC DANR Publ. #3488.	
Question 2.7 Other regions invaded	C Observational back
Identify other regions: Native to desert and semidesert areas of the mideast and North Africa.	
Rationale: Seems to inhabit generally the same areas in California (see 3.1).	
Sources of information: 1. Kadmon, R.; Shmida, A. 1990. Spatiotemporal demographic processes in plant populations, an approach and a case study. <i>American Naturalist</i> . 135(3) 382-397.	
Question 3.1 Ecological amplitude/Range	D Observational back
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Inhabits desert and semi-desert areas. Might have been introduced to California with cattle or tourism, but this is not known. <i>Stipa capensis</i> was discovered in California by Andrew Sanders in 1995 (March	

<p>11) at Chino Canyon at 985 feet elevation below the Palm Springs Aerial Tramway (first collection in the United States). It has since expanded across the northern Coachella Valley near Palm Springs. It was collected in 1997 at Cathedral City, at the border with Rancho Mirage (Sanders, March 11) and south of Chino Canyon at 1150 feet (Sanders, March 18). It was collected again at Chino Canyon at 1200 feet (April 15, 2000) and in Cathedral Canyon at 500 feet (April 2 2003) (1). In 2005, Minnich observed extensive cover of <i>S. capensis</i> 10-30 cm tall on the Chino Canyon alluvial fan and on an adjacent north-facing slope at the base of the San Jacinto Mountain below 1200 feet (2).</p>	
<p>Rationale: enter text here</p>	
<p>Sources of information: 1. Andrew C. Sanders, Herbarium, Department of Botany and Plant Sciences, University of California, Riverside, CA 2. Richard A. Minnich, Department of Earth Sciences, University of California, Riverside, CA</p>	
<p>Question 3.2 Distribution/Peak frequency</p>	<p>D Anecdotal back</p>
<p>Describe distribution: No widely distributed as of yet.</p>	
<p>Rationale: enter text here</p>	
<p>Sources of information: enter text here</p>	

Worksheet A[back](#)

Reaches reproductive maturity in 2 years or less	Yes: 1 pt
Dense infestations produce >1,000 viable seed per square meter	No: 0 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 <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
	3 pts 2 unknowns
	C (1-3)
Note any related traits: enter text here	

Worksheet C - California Ecological Types

[back](#)

(*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	D. present
	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	score
	valley and foothill grassland	score
	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).