

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):	Cortaderia selloana (Schultes) Asch. & Graebner
Synonyms:	enter text here
Common names:	pampasgrass, white pampasgrass
Evaluation date (mm/dd/yy):	05/14/04
Evaluator #1 Name/Title:	Alison E Stanton
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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:	Alison E Stanton, Joe DiTomaso, Cynthia Roye, Joanna Clines, 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	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	A	Other Pub. Mat'l
1.4	Impact on genetic integrity	D	Rev'd, Sci. Pub'n

“Impact”
 Enter four characters from Q1.1-1.4 below:
BAAD
 Use matrix determine the score; enter below:
A

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

“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:
17
 Use matrix to determine score and enter below:
A

“Plant Score”
 Using matrix, determine the Overall Score and Alert Status from the three section scores and enter them below:
High
No Alert

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

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

Table 3. Documentation

Question 1.1 Impact on abiotic ecosystem processes	B Doc'n level back
Identify ecosystem processes impacted: fire intensity, fire frequency	
Rationale: These large plants produce significant amounts of biomass that is extremely flammable, increasing both the frequency and intensity of fire. The large size also significantly reduces light availability, especially in mono-specific stands.	
Sources of information: 1. Gadgil, R.L. A.L. Knowles, and J.A. Zabkiewicz. 1984. Pampas-A new forest weed problem. Proc. 37th New Zealand Weed and Pest Control Conference. p187-190.	
2. Gadgil, R.L., A.M. Sandberg, P.J. Allen, and S. S. Gallagher. 1990. Partial suppression of pampas grass by other species at the seedling stage. Proceedings of an International Conference, Rotorua, New Zealand, July 1989. Ministry of Forestry FRI Bulletin 155.	
3. Gadgil, R.L., P.G. Barton, P.J. Allen, and A.M. Sandberg. 1990. Growth of pampas grass (<i>Cortaderia</i> spp.) in New Zealand <i>Pinus radiata</i> forests. <i>New Zealand Journal of Forestry Science</i> 20(2):176-183.	
4. Harradine, A.R. 1991. The impact of pampas grass as weeds in southern Australia. <i>Plant Protection Quarterly</i> 6:111-115.	
Question 1.2 Impact on plant community composition, structure, and interactions	A Rev'd, Sci. Pub'n back
Identify type of impact or alteration: Alters plant community composition and structure.	
Rationale: Develops mono-specific stands with >75% cover, eliminates lower layers, displaces native species, and creates a new layer in maritime chaparral and other scrub ecosystems. San Diego plants?	
Sources of information: 1. Lambrinos, J. G. 2000. The impact of the invasive alien grass <i>Cortaderia jubata</i> (Lemoine) Stapf on an endangered mediterranean-type shrubland in California. <i>Diversity and Distributions</i> . 6:217-231	
2. Rawling, J.L. 1988. The ecology and distribution of pampas grass (<i>Cortaderia selloana</i>) in Sydney bushland. Masters thesis. Macquarie University, Australia.	
Question 1.3 Impact on higher trophic levels	B Other Pub. Mat'l back
Identify type of impact or alteration: Total alteration of native plant communities decreases forage and nesting sites for native animals, although rats, some snakes, and rabbits have been observed in dense infestations.	
Rationale: Rare plants and animals in San Diego?	
Sources of information: USFWS	
Question 1.4 Impact on genetic integrity	D Rev'd, Sci. Pub'n back
Identify impacts: No native congeners	

Rationale: enter text here	
Sources of information: 1. Hickman, J. C. (ed.) 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, CA	
Question 2.1 Role of anthropogenic and natural disturbance in establishment	B Other Pub. Mat'l back
Describe role of disturbance: Often found in disturbed areas, including roadsides, logged forests, and railroad tracks. Also colonize naturally occurring landslides	
Rationale: Germination requires light, but seedlings occasionally establish in undisturbed areas.	
Sources of information: 1. Drewitz, J.J., and J. M. DiTomaso. 2000. Seed biology and control of jubatagrass. Proceedings of the California Exotic Pest Plant Council Symposium 2000. 6:32 2. Tschohl, A. 2000. Jubatagrass vs. pampasgrass: a growth analysis and comparison of invasive potential. Proceedings of the California Exotic Pest Plant Council Symposium 2000. 6:32-33 3. Costas-Lippmann, M. 1976. Ecology and reproductive biology of the genus Cortaderia in California. Doctoral dissertation, University of California, Berkeley 4. Stanton, A.E. 2000. Cortaderia in California: seedling ecology and management. Masters thesis. University of California, Davis.	
Question 2.2 Local rate of spread with no management	A Rev'd, Sci. Pub'n back
Describe rate of spread: Increases rapidly after initial colonization	
Rationale: Prolific seed production and light, wind-dispersed seeds facilitate rapid expansion.	
Sources of information: 1. Conner, H.E. 1965. Breeding systems in New Zealand grasses V. Naturalized species of Cortaderia. New Zealand Journal of Botany 3:17-23 2. Costas-Lippmann, M. 1976. Ecology and reproductive biology of the genus Cortaderia in California. Doctoral dissertation, University of California, Berkeley	
Question 2.3 Recent trend in total area infested within state	B Other Pub. Mat'l back
Describe trend: Much of the coastal habitat appears to be saturated with infestations, but the total acreage in the state is probably still increasing	
Rationale: pampasgrass may be increasing in the Central Valley. It is most prevalent South of Santa Barbara, but is still widely available in the nursery trade.	
Sources of information: 1. Lambrinos, J. G. 2000. The impact of the invasive alien grass Cortaderia jubata (Lemoine) Stapf on an endangered mediterranean-type shrubland in California. Diversity and Distributions.	

6:217-231	
2.Stanton, A.E. 2000. Cortaderia in California:seedling ecology and management. Masters thesis. University of California, Davis.	
Question 2.4 Innate reproductive potential	A Rev'd, Sci. Pub'n back
Describe key reproductive characteristics: Produces prolific seed, more than 100,00 seed on a single plume, although only about 30% are viable.	
Rationale: enter text here	
Sources of information: 1. Drewitz, J.J., and J. M. DiTomaso. 2000. Seed biology and control of jubatagrass. Proceedings of the California Exotic Pest Plant Council Symposium 2000. 6:32	
2. Tschohl, A. 2000. Jubatagrass vs. pampasgrass: a growth analysis and comparison of invasive potential. Proceedings of the California Exotic Pest Plant Council Symposium 2000. 6:32-33	
3.Costas-Lippmann, M. 1976. Ecology and reproductive biology of the genus Cortaderia in California. Doctoral dissertation, University of California, Berkeley	
4.Stanton, A.E. 2000. Cortaderia in California:seedling ecology and management. Masters thesis. University of California, Davis.	
Question 2.5 Potential for human-caused dispersal	A Observational back
Identify dispersal mechanisms: Widely sold in the nursery trade. Humans cut and carry around the plumes including placing plumes on cars and trucks.	
Rationale: enter text here	
Sources of information: 1.Stanton, A.E. 2000. Cortaderia in California:seedling ecology and management. Masters thesis. University of California, Davis.	
Question 2.6 Potential for natural long-distance dispersal	A Rev'd, Sci. Pub'n back
Identify dispersal mechanisms: Seed can blow up to 20 miles in the wind. Seed stick to animal fur and get stuck on other vegetation	
Rationale: enter text here	
Sources of information: 1.Costas-Lippmann, M. 1976. Ecology and reproductive biology of the genus Cortaderia in California. Doctoral dissertation, University of California, Berkeley	
2.Harradine, A.R. 1991. The impact of pampas grass as weeds in southern Australia. Plant Protection Quarterly 6:111-115.	

Question 2.7 Other regions invaded	C Rev'd, Sci. Pub'n back
Identify other regions: Australia, New Zealand, South Africa	
Rationale: enter text here	
Sources of information: 1. Harradine, A.R. 1991. The impact of pampas grass as weeds in southern Australia. Plant Protection Quarterly 6:111-115. 2. Rawling, J.L. 1988. The ecology and distribution of pampas grass (<i>Cortaderia selloana</i>) in Sydney bushland. Masters thesis. Macquarie University, Australia.	
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: Distribution is primarily coastal, south of Santa Barbara. Not found on serpentine soils. Co-occurs with jubatagrass in large urban centers, including the North Coast. Escaping in interior regions, especially in riparian zones. Introduced to CA in 1872.	
Rationale: Tolerates frost, utilizes higher light intensities, survives at higher temperatures.	
Sources of information: Costas-Lippmann, Stanton	
Question 3.2 Distribution/Peak frequency	C Observational back
Describe distribution: enter text here	
Rationale: enter text here	
Sources of information: Stanton, DiTomaso	

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	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	Yes: 1 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	C. 5-20%
	coastal scrub	C. 5-20%
	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	C. 5-20%
	valley and foothill grassland	score
	Great Basin grassland	score
	vernal pool	score
	meadow and seep	D. present
	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	D. present
	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	D. present
	closed cone coniferous forest	D. present
	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).