

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 jubata (Lemoine) Stapf |
| Synonyms: | Cortaderia atacamensis |
| Common names: | jubatagrass, pampasgrass, pink pampasgrass |
| Evaluation date (mm/dd/yy): | 05/14/04 |
| Evaluator #1 Name/Title: | Alison E Stanton |
| Affiliation: | BMP Ecosciences |
| Phone numbers: | 530 573 1177 |
| Email address: | alisonestanton@sbcglobal.net |
| Address: | 2163 Cornelian Drive South Lake Tahoe, CA 96150 |
| 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

| | | | |
|----------------------------|---------------------------------------|----------|--------------------------|
| <u>1.1</u> | Impact on abiotic ecosystem processes | B | Rev'd, Sci. Pub'n |
| <u>1.2</u> | Impact on plant community | A | Rev'd, Sci. Pub'n |
| <u>1.3</u> | Impact on higher trophic levels | A | Other Pub. Mat'l |
| <u>1.4</u> | 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

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

| | | | |
|----------------------------|------------------------------------------------------------|----------|--------------------------|
| <u>3.1</u> | Ecological amplitude/Range | A | Rev'd, Sci. Pub'n |
| <u>3.2</u> | Distribution/Peak frequency <u>Wksht C</u> | B | Other Pub. Mat'l |

“Distribution”

Use matrix determine the score; enter below:

A

Table 3. Documentation

| | |
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| <p>Question 1.1 Impact on abiotic ecosystem processes</p> | <p>B Doc'n level back</p> |
| <p>Identify ecosystem processes impacted: fire intensity, fire frequency</p> | |
| <p>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.</p> | |
| <p>Sources of information: 1.Gadcil, 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.</p> <p>2.Gadcil, 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.</p> <p>3.Gadcil, 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.</p> <p>4.Harradine, A.R. 1991. The impact of pampas grass as weeds in southern Australia. <i>Plant Protection Quarterly</i> 6:111-115.</p> | |
| <p>Question 1.2 Impact on plant community composition, structure, and interactions</p> | <p>A Rev'd, Sci. Pub'n back</p> |
| <p>Identify type of impact or alteration: Alters plant community composition and structure.</p> | |
| <p>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. Cited as a direct threat to Gowen's cypress, Crystal Springs fountain thistle, and the Short-leaved Dudleya.</p> | |
| <p>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</p> <p>2.Fuller, T.C. 1976. Its history as a weed. In B.D. Cowan, <i>The menace of Pampas grass</i>. <i>Fremontia</i> 4(2):14-16.</p> <p>3. Rawling, J</p> <p>4.USFWS</p> | |
| <p>Question 1.3 Impact on higher trophic levels</p> | <p>B Other Pub. Mat'l back</p> |
| <p>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.</p> | |
| <p>Rationale: Displacing native coastal prairie in Mission Blue Butterfly habitat</p> | |
| <p>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</p> | |

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| 2.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: 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 distrubed areas, including roadsides, logged forests, and railroad tracks. Also colonize narturally occuring 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 | |
| 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. Apomictic reproduction enables a single individual to reproduce and colonize an area. | |
| 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 | |
| 3.Fuller, T.C. 1976. Its history as a weed. In B.D. Cowan, The menace of Pampas grass. Fremontia 4(2):14-16. | |
| 4. Harradine, A.R. 1991. The impact of pampas grass as weeds in southern Australia. Plant Protection Quarterly 6:111-115. | |
| 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 | |

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| Rationale: Jubatagrass is restricted to coastal habitats | |
| 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. 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 | |
| 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. Apomictic reproductive strategy and gynodioecious breeding system. Plants re-sprout vigorously and root balls will re-root. | |
| Rationale: enter text here | |
| 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. Conner, H.E. 1972. Breeding systems in Cortaderia (Gramineae). Evolution 27:663-678. 3. Costas-Lippmann, M. 1976. Ecology and reproductive biology of the genus Cortaderia in California. Doctoral dissertation, University of California, Berkeley. 4.1. 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 5. 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 | |
| Question 2.5 Potential for human-caused dispersal | A Observational back |
| Identify dispersal mechanisms: Humans cut and carry around the plumes including placing plumes on cars and trucks. Thee plant has been mistakenly sold as pampas grass in the past and seed sales would increase the chances of misidentification. | |
| Rationale: enter text here | |
| Sources of information: Stanton, personal observation | |
| 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. Harradine, A.R. 1991. The impact of pampas grass as weeds in southern Australia. | |

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| 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. Fuller, T.C. 1976. Its history as a weed. In B.D. Cowan, The menace of Pampas grass. Fremontia 4(2):14-16. 2. Harradine, A.R. 1991. The impact of pampas grass as weeds in southern Australia. Plant Protection Quarterly 6:111-115. 2. Rawling | |
| 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: Restricted to coastal areas, primarily north of Santa Barbara. Co-occurs with pampasgrass in large urban areas and the North Coast. Tolerates serpentine soils. Appears to require fog, cannot utilize high light intensities or survive high temperatures. Not frost tolerant. | |
| Rationale: enter text here | |
| Sources of information: 1. Lambrinos, J. G. 2005. A tale of two invaders: the dynamic history of pampas grass and jubata grass in California. Cal-IPC News. Fall/Winter 2004-05. 2. 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 3. DiTomaso et al. | |
| Question 3.2 Distribution/Peak frequency | C Other Pub. Mat'l back |
| Describe distribution: enter text here | |
| Rationale: enter text here | |
| Sources of information: enter text here | |

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

[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 | B. 21-50 |
| | 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 | C. 5-20% |
| | 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).