

# 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**

<b>Species name (Latin binomial):</b>	Phalaris aquatica L.
<b>Synonyms:</b>	Phalaris commutata, Phalaris stenoptera, Phalaris tuberosa
<b>Common names:</b>	Harding grass, bulbous canarygrass, phalaris, toowoomba grass
<b>Evaluation date (mm/dd/yy):</b>	4/5/05
<b>Evaluator #1 Name/Title:</b>	Elizabeth Brusati, project manager
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Section below for list committee use—please leave blank

<b>List committee members:</b>	Carla Bossard, John Randall, Carri Piroso, Dan Gluesenkamp, Gina Skurka, Brianna Richardson
<b>Committee review date:</b>	7/8/05
<b>List date:</b>	enter text here
<b>Re-evaluation date(s):</b>	enter text here

**General comments on this assessment:**

enter text here

**Table 2. Criteria, Section, and Overall Scores**

<a href="#">1.1</a>	Impact on abiotic ecosystem processes	<b>B</b>	<b>Other Pub. Mat'l</b>
<a href="#">1.2</a>	Impact on plant community	<b>A</b>	<b>Other Pub. Mat'l</b>
<a href="#">1.3</a>	Impact on higher trophic levels	<b>B</b>	<b>Other Pub. Mat'l</b>
<a href="#">1.4</a>	Impact on genetic integrity	<b>U</b>	<b>No Information</b>

**Impact**

*Enter four characters from Q1.1-1.4 below:*

**BABU**

*Using matrix, determine score and enter below:*

**B**

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

**Invasiveness**

*Enter the sum total of all points for Q2.1-2.7 below:*

**14**

*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:*

**Medium**

**No Alert**

<a href="#">3.1</a>	Ecological amplitude/Range	<b>A</b>	<b>Other Pub. Mat'l</b>
<a href="#">3.2</a>	Distribution/Peak frequency <a href="#">Wksht C</a>	<b>D</b>	<b>Observational</b>

**Distribution**

*Using matrix, determine score and enter below:*

**B**

**Table 3. Documentation**

<p><b>Question 1.1</b> Impact on abiotic ecosystem processes <span style="float: right;">B Other Pub. Mat'l <a href="#">back</a></span></p>
<p>Identify ecosystem processes impacted: Water availability (competing with other plants).</p>
<p>Rationale: Defoliation of phalaris reduced loss of water from the topsoil.</p>
<p>Sources of information: Dear, B. S., P. S. Cocks, E. C. Wolfe, and D. P. Collins. 1998. Established perennial grasses reduce the growth of emerging subterranean clover seedlings through competition for water, light, and nutrients. Australian Journal of Agricultural Research. 49:41-51</p> <p>Dan Gluesenkamp, Audubon Canyon Ranch, pers. obs.</p>
<p><b>Question 1.2</b> Impact on plant community composition, structure, and interactions <span style="float: right;">A Other Pub. Mat'l <a href="#">back</a></span></p>
<p>Identify type of impact or alteration: Seedlings compete poorly with established vegetation, but larger plants easily displace native vegetation (1, 2). Can form localized dense stands (3, 4, 5).</p>
<p>Rationale: enter text here</p>
<p>Sources of information: 1. DiTomaso, J.M., and E. H. Healy. 2003. Aquatic and Riparian Weeds of the West. University of California, Agriculture and Natural Resources Publication 3421.</p> <p>2. Dear, B. S., P. S. Cocks, E. C. Wolfe, and D. P. Collins. 1998. Established perennial grasses reduce the growth of emerging subterranean clover seedlings through competition for water, light, and nutrients. Australian Journal of Agricultural Research. 49:41-51</p> <p>3. Peterson, D. L. 1988. Element stewardship abstract for Phalaris tuberosa (harding grass). The Nature Conservancy, Arlington, VA. Available: <a href="http://tncweeds.ucdavis.edu/esadocs/phalaqua.html">tncweeds.ucdavis.edu/esadocs/phalaqua.html</a></p> <p>4. Dan Gluesenkamp, Audubon Canyon Ranch, pers. obs.</p> <p>5. Brianna Richardson, Acterra, pers. obs.</p>
<p><b>Question 1.3</b> Impact on higher trophic levels <span style="float: right;">B Other Pub. Mat'l <a href="#">back</a></span></p>
<p>Identify type of impact or alteration: Planted for forage but can be toxic to animals when consumed in large quantities. Causes a neurological condition called "phalaris staggers" or heart failure.</p>
<p>Rationale:</p>
<p>Sources of information: DiTomaso, J.M., and E. H. Healy. 2003.</p>
<p><b>Question 1.4</b> Impact on genetic integrity <span style="float: right;">U No Information <a href="#">back</a></span></p>
<p>Identify impacts: There are four native species of Phalaris, but we have no information on hybridization.</p>
<p>Rationale: enter text here</p>

Sources of information: Hickman, J. C. (ed.) 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, CA enter text here	
<b>Question 2.1</b> Role of anthropogenic and natural disturbance in establishment	B Other Pub. Mat'l <a href="#">back</a>
Describe role of disturbance: Seedlings are easily outcompeted by established vegetation.	
Rationale: enter text here	
Sources of information: DiTomaso, J.M., and E. H. Healy. 2003.	
<b>Question 2.2</b> Local rate of spread with no management	B Observational <a href="#">back</a>
Describe rate of spread: In some areas spread can be rapid and in other areas more slowly.	
Rationale: enter text here	
Sources of information: DiTomaso, observational	
<b>Question 2.3</b> Recent trend in total area infested within state	B Other Pub. Mat'l <a href="#">back</a>
Describe trend: Spreading	
Rationale: enter text here	
Sources of information: Harrington, K.C., and W. T. Lanini. 2000. Phalaris aquatica L. pp. 262-266 in Bossard, C. C. , J. M. Randall, and M. C. Hoshovsky. Invasive Plants of California's Wildlands. University of California Press, Berkeley, CA. Also on-line: <a href="http://groups.ucanr.org/ceppc/Invasive_Plants_of_California's_Wildlands/">http://groups.ucanr.org/ceppc/Invasive_Plants_of_California's_Wildlands/</a> Dan Gluesenkamp, Audubon Canyon Ranch, pers. obs.	
<b>Question 2.4</b> Innate reproductive potential	A Other Pub. Mat'l <a href="#">back</a>
Describe key reproductive characteristics: Perennial grass. Reproduces by seed. Becomes dormant during summer in dry areas (1). Can also spread by rhizomes (2), but not as strongly as reed canary grass (3). Grazing decreases abundance of phalaris (2). Seed production varies with plant density, soil type, and weather conditions, but some plants can produce 40,000 seeds per square m. Seeds produced between May and September (3)	
Rationale: enter text here	
Sources of information: 1. DiTomaso, J.M., and E. H. Healy. 2003. 2. Leiva, M. J., and R. F. Ales. 2000. Effect of grazing on the population biology of Phalaris aquatica. Journal of Range Management. 53:277-281	

3. Harrington, K.C., and W. T. Lanini. 2000.	
<b>Question 2.5</b> Potential for human-caused dispersal	B Other Pub. Mat'l <a href="#">back</a>
Identify dispersal mechanisms: Was introduced to provide forage on pastures and rangeland. Has escaped cultivation in riparian areas and other moist places. Seeds can be dispersed by human activities (1). Seeds also sold over the internet to produce grass harvestable for hallucinogenic drugs (2).	
Rationale: enter text here	
Sources of information: DiTomaso, J.M., and E. H. Healy. 2003. Information on Phalaris aquatica. <a href="http://peyote.com/jonstef/phalaris.htm">http://peyote.com/jonstef/phalaris.htm</a> , and other websites	
<b>Question 2.6</b> Potential for natural long-distance dispersal	B Other Pub. Mat'l <a href="#">back</a>
Identify dispersal mechanisms: Seeds can be dispersed with animals, but this is mostly short distance. Near aquatic areas the seed can move greater distances.	
Rationale: enter text here	
Sources of information: DiTomaso, J.M., and E. H. Healy. 2003. Aquatic and Riparian Weeds of the West. University of California, Agriculture and Natural Resources Publication 3421. Harrington, K.C., and W. T. Lanini. 2000.	
<b>Question 2.7</b> Other regions invaded	C Other Pub. Mat'l <a href="#">back</a>
Identify other regions: Native to Mediterranean Europe but the cultivar in California was introduced from Australia. Also has escaped cultivation in Arizona, Oregon and a few states in the southern and eastern US	
Rationale: Widespread in California and already inhabits areas similar to those invaded in other places.	
Sources of information: 1. DiTomaso, J.M., and E. H. Healy. 2003. 2. Harrington, K.C., and W. T. Lanini. 2000.	
<b>Question 3.1</b> Ecological amplitude/Range	A Other Pub. Mat'l <a href="#">back</a>
Describe ecological amplitude, identifying date of source information and approximate date of introduction to the state, if known: Inhabits riparian and other moist areas. A facultative wetland species. Tolerates frost and drought. Present in northwestern California., central Sierra Nevada, Central Coast, and South Coast to 1200m (1). Common in coastal valleys and foothill grasslands from Oregon to the Mexican border. Also found in the Sacramento and San Joaquin Valleys. Typically found along roadsides that are seldom defoliated (2).	
Rationale: 1. DiTomaso, J.M., and E. H. Healy. 2003.	

2. Harrington, K.C., and W. T. Lanini. 2000. Dan Gluesenkamp, Audubon Canyon Ranch, pers. obs. Brianna Richardson, Acterra, pers. obs.	
Sources of information: enter text here	
<b>Question 3.2</b> Distribution/Peak frequency	D Observational <a href="#">back</a>
Describe distribution: Mainly found along roadsides and not as common in wildland areas.	
Rationale:	
Sources of information: DiTomaso, observational	

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Reaches reproductive maturity in 2 years or less	<b>Yes: 1 pt</b>
Dense infestations produce >1,000 viable seed per square meter	<b>Yes: 2 pts</b>
Populations of this species produce seeds every year.	<b>Yes: 1 pt</b>
Seed production sustained over 3 or more months within a population annually	<b>Yes: 1 pt</b>
Seeds remain viable in soil for three or more years	<b>Unknown: 0 pts</b>
Viable seed produced with <i>both</i> self-pollination and cross-pollination	<b>Unknown: 0 pts</b>
Has quickly spreading vegetative structures (rhizomes, roots, etc.) that may root at nodes	<b>Yes: 1 pt</b>
Fragments easily and fragments can become established elsewhere	<b>No: 0 pts</b>
Resprouts readily when cut, grazed, or burned	<b>Yes: 1 pt</b>
	<b>7 pts      3 unknowns</b>
	<b>A (6+ pts)</b>
<b>Note any related traits:</b> enter text here	

## Worksheet C - California Ecological Types

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(*sensu* Holland 1986)

Major Ecological Types	Minor Ecological Types	Code*
<b>Marine Systems</b>	marine systems	score
<b>Freshwater and Estuarine Aquatic Systems</b>	lakes, ponds, reservoirs	score
	rivers, streams, canals	score
	estuaries	score
<b>Dunes</b>	coastal	score
	desert	score
	interior	score
<b>Scrub and Chaparral</b>	coastal bluff scrub	score
	coastal scrub	D. presen
	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
<b>Grasslands, Vernal Pools, Meadows, and other Herb Communities</b>	coastal prairie	D. presen
	valley and foothill grassland	D. presen
	Great Basin grassland	score
	vernal pool	score
	meadow and seep	D. presen
	alkali playa	score
	pebble plain	score
<b>Bog and Marsh</b>	bog and fen	score
	marsh and swamp	score
<b>Riparian and Bottomland</b>	riparian forest	score
	riparian woodland	D. presen
	riparian scrub (incl. desert washes)	score
<b>Woodland</b>	cismontane woodland	D. presen
	piñon and juniper woodland	score
	Sonoran thorn woodland	score
<b>Forest</b>	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
<b>Alpine Habitats</b>	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).