

WEED RISK ASSESSMENT FORM

Botanical name:	<i>Phalaris arundinacea</i> L.	
Common name:	Reed canarygrass	
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Outcome score:

A. Climatic Comparison		
This species is present or may potentially establish in the following eco-geographic regions:		
1 South Coastal	Yes	
2 Interior-Boreal	Yes	
3 Arctic-Alpine	Yes	
This species is unlikely to establish in any region in Alaska		

B.	Invasiveness Ranking	Total (Total Answered*) Possible	Total
1	Ecological impact	40 (40)	33
2	Biological characteristic and dispersal ability	25 (25)	20
3	Ecological amplitude and distribution	25 (25)	24
4	Feasibility of control	10 (10)	6
	Outcome score	100 (100) ^b	83
	Relative maximum score [†]		0.83

* For questions answered "unknown" do not include point value for the question in parentheses for "Total Answered Points Possible."

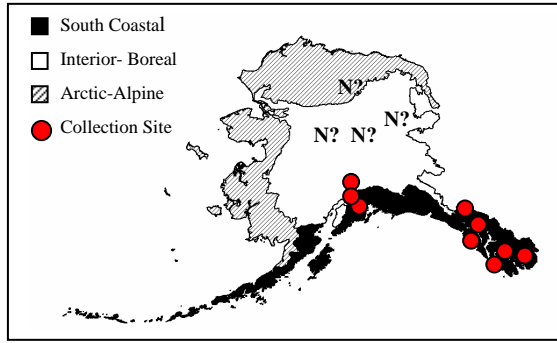
[†] Calculated as ^a/_b.

SPECIAL NOTE - NATIVITY: Some populations of *Phalaris arundinacea* L. are possibly native in Alaska. Four sites that may harbor native forms are from hot springs of interior Alaska (Big Windy, Kanuti, Kilo, and Manley Hot Springs; "N?" in figure). Active mining occurred in these areas in the early 20th Century and seeds may have been brought in with livestock. If these populations are native they represent important and likely unique components to the biodiversity and biogeographic history of Alaska and Beringia. *Phalaris arundinacea* in these remote locations should not be removed. However, monitoring may be critical as introgression with other cultivated and weedy forms can result in substantial increases in invasiveness (Merigliano and Lesica 1998). Populations south of the Alaska Range are generally associated with anthropogenic disturbance and are most likely introduced or introgressed genotypes as in the Pacific Northwest (see Merigliano and Lesica 1998). These introduced populations pose a serious threat to communities and ecosystem function.

Greater study, using molecular and morphological markers is necessary to tease apart the patterns of nativity of this species.

A. CLIMATIC COMPARISON:

	1.1 Has this species ever been collected or documented in Alaska?
Yes	Yes – continue to 1.2
	No – continue to 2.1
	1.2. Which eco-geographic region has it been collected or documented (see inset map)? <i>Proceed to Section B. Invasiveness Ranking.</i>
Yes	South Coastal
Yes	Interior-Boreal
Yes	Arctic-Alpine



Documentation: *Phalaris arundinacea* has been documented in South Coastal (Skagway, Craig, Petersburg – Hultén 1968; Juneau, Seward, Sitka, Ketchikan – UAM 2004), Interior-Boreal (Fairbanks, Anchorage, Talkeetna – Hultén 1968; Circle, Tanana, Big Windy, Kilo, Manley, Kanuti – UAM 2004), and Arctic-Alpine (Bettles – UAM 2004) ecoregions in Alaska.

Sources of information:

Hultén, E. 1968. *Flora of Alaska and Neighboring Territories*. Stanford University Press, Stanford, CA. 1008 p.

University of Alaska Museum. University of Alaska Fairbanks. 2004.
<http://hispidamuseum.uaf.edu:8080/home.cfm> [Jan 4, 2004].

2.1. Is there a 40% or higher similarity (based on CLIMEX climate matching) between climates any where the species currently occurs and

a. Juneau (South Coastal Region)?

Yes – record locations and similarity; proceed to Section B.
Invasiveness Ranking

No

b. Fairbanks (Interior-Boreal)?

Yes – record locations and similarity; proceed to Section B.
Invasiveness Ranking

No

c. Nome (Arctic-Alpine)?

Yes – record locations and similarity; proceed to Section B.
Invasiveness Ranking

No

– If “No” is answered for all regions, reject species from consideration

Documentation:

Sources of information:

B. INVASIVENESS RANKING

1. ECOLOGICAL IMPACT

1.1. Impact on Natural Ecosystem Processes

- A. No perceivable impact on ecosystem processes 0
- B. Influences ecosystem processes to a minor degree (e.g., has a perceivable but mild influence on soil nutrient availability) 3
- C. Significant alteration of ecosystem processes (e.g., increases sedimentation rates along streams or coastlines, reduces open water that are important to waterfowl) 7
- D. Major, possibly irreversible, alteration or disruption of ecosystem processes (e.g., the species alters geomorphology; hydrology; or affects fire frequency, altering community composition; species fixes substantial levels of nitrogen in the soil making soil unlikely to support certain native plants or more likely to favor non-native species) 10

U. Unknown

Score

9

Documentation:

Identify ecosystem processes impacted:

Reed canarygrass promotes silt deposition and the consequent constriction of waterways and irrigation canals. It may alter soil hydrology (Lyons 1998).

Rational:

Sources of information:

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

1.2. Impact on Natural Community Structure

- A. No perceived impact; establishes in an existing layer without influencing its structure 0
- B. Influences structure in one layer (e.g., changes the density of one layer) 3
- C. Significant impact in at least one layer (e.g., creation of a new layer or elimination of an existing layer) 7
- D. Major alteration of structure (e.g., covers canopy, eradicating most or all layers below) 10
- U. Unknown

Score

7

Documentation:

Identify type of impact or alteration:

Reed canarygrass can form dense, persistent, monospecific stands (Lyons 1998), eliminating low herbaceous layers (M. L. Carlson – pers. obs.).

Rational:

Sources of information:

Carlson, M. L., Assistant Research Professor – Botany, Alaska Natural Heritage Program, University of Alaska Anchorage, 707 A Street, Anchorage, Alaska. Tel: (907) 257-2790 – Pers. obs.

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

1.3. Impact on Natural Community Composition

- A. No perceived impact; causes no apparent change in native populations 0
- B. Influences community composition (e.g., reduces the number of individuals in one or more native species in the community) 3
- C. Significantly alters community composition (e.g., produces a significant reduction in the population size of one or more native species in the community) 7
- D. Causes major alteration in community composition (e.g., results in the extirpation of one or several native species, reducing biodiversity or change the community composition towards species exotic to the natural community) 10
- U. Unknown

Score

9

Documentation:

Identify type of impact or alteration:

The stands of *Phalaris arundinacea* exclude and displace native plants and animals (Hutchison 1992, Lyons 1998, WSDE 2003). May inhibit growth of other species for 3-5 months, eventually eliminating these species (Rutledge and McLendon 1996).

Rational:

Sources of information:

Hutchison, M. 1992. Vegetation management guideline: Reed Canary Grass (*Phalaris arundinaceae* L.). Natural Areas Journal 12(3): 159.

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Rutledge, C R. and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97pp. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/explant/explant.htm> (Version 15DEC98).

WSDE - Washington State Department of Ecology: Water Quality Home. Technical Information About *Phalaris arundinacea* (Reed Canarygrass).

<http://www.ecy.wa.gov/programs/wq/plants/weeds/index.html> [Dec 2, 2003].

1.4. Impact on higher trophic levels (cumulative impact of this species on the animals, fungi, microbes, and other organisms in the community it invades)

- A. Negligible perceived impact 0
- B. Minor alteration 3
- C. Moderate alteration (minor reduction in nesting/foraging sites, reduction in habitat connectivity, interference with native pollinators, injurious components such as spines, toxins) 7
- D. Severe alteration of higher trophic populations (extirpation or endangerment of an existing native species/population, or significant reduction in nesting or foraging sites) 10
- U. Unknown

Score

8

Documentation:

Identify type of impact or alteration:

Waterfowl, upland game birds, riparian mammals, and fish all use reed canarygrass for cover and food (Snyder 1992). But Lyons (1998) suggested that reed canarygrass grows too densely to provide adequate cover for small mammals and waterfowl. It can also overgrow irrigation ditches and small natural watercourses, impacting aquatic species. Reed canarygrass contributes to increased water temperatures and decreased habitat values for salmon and other wildlife. Dense stands can form a physical barrier to migrating salmon (Lantz 2000, Whatcom Weeds 2003).

Rational:

Sources of information:

Lantz, L.E. 2000. Reed Canarygrass (*Phalaris arundinacea* L.). Washington State Noxious Weed Control Board.

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Snyder, S.A. 1992. *Phalaris arundinacea*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [2004, May 5].

Whatcom Weeds. 2003. Reed Canarygrass (*Phalaris arundinacea* L.). Whatcom County Noxious Weed Control Board. Whatcom County Public Works. Bellingham, Whashington. [June 8, 2004].

Total Possible

40

Total

33

2. BIOLOGICAL CHARACTERISTICS AND DISPERSAL ABILITY

2.1. Mode of reproduction

- A. Not aggressive reproduction (few [0-10] seeds per plant and no vegetative reproduction) 0
- B. Somewhat aggressive (reproduces only by seeds (11-1,000/m²)) 1
- C. Moderately aggressive (reproduces vegetatively and/or by a moderate amount of seed, <1,000/m²) 2
- D. Highly aggressive reproduction (extensive vegetative spread and/or many seeded, >1,000/m²) 3
- U. Unknown

Score

2

Documentation:

Describe key reproductive characteristics (including seeds per plant):

Reproduction is from seed and vegetatively by stout creeping rhizomes (Lyons 1998, Rutledge and McLendon 1996).

Rational:

Sources of information:

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Rutledge, C R. and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97pp. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/explant/explant.htm> (Version 15DEC98).

2.2. Innate potential for long-distance dispersal (bird dispersal, sticks to animal hair, buoyant fruits, wind-dispersal)

- | | | |
|----|---|---|
| A. | Does not occur (no long-distance dispersal mechanisms) | 0 |
| B. | Infrequent or inefficient long-distance dispersal (occurs occasionally despite lack of adaptations) | 2 |
| C. | Numerous opportunities for long-distance dispersal (species has adaptations such as pappus, hooked fruit-coats, etc.) | 3 |
| U. | Unknown | |

Score

2

Documentation:

Identify dispersal mechanisms:

Seeds have no adaptations for long-distance dispersal. Both rhizome fragments and seeds may wash downstream along streams and rivers (Rutledge and McLendon 1996).

Rational:

Sources of information:

Rutledge, C R. and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97pp. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/explant/explant.htm> (Version 15DEC98).

2.3. Potential to be spread by human activities (both directly and indirectly – possible mechanisms include: commercial sales, use as forage/revegetation, spread along highways, transport on boats, contamination, etc.)

- | | | |
|----|--|---|
| A. | Does not occur | 0 |
| B. | Low (human dispersal is infrequent or inefficient) | 1 |
| C. | Moderate (human dispersal occurs) | 2 |
| D. | High (there are numerous opportunities for dispersal to new areas) | 3 |
| U. | Unknown | |

Score

3

Documentation:

Identify dispersal mechanisms:

Reed canarygrass has been planted widely for forage and erosion control (Lyons 1998, WSDE 2003). It is also a seed contaminant (USDA, ARS).

Rational:

Sources of information:

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

WSDE - Washington State Department of Ecology: Water Quality Home. Technical Information About *Phalaris arundinacea* (Reed Canarygrass).

<http://www.ecy.wa.gov/programs/wq/plants/weeds/index.html> [Dec 2, 2003].

USDA, ARS, National Genetic Resources Program. *Germplasm Resources Information Network - (GRIN)* [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: <http://www.ars->

2.4. Allelopathic

- A. No 0
- B. Yes 2
- U. Unknown

Score

Documentation:

Describe effect on adjacent plants:

Reed canarygrass is not known to be allelopathic.

Rational:

Sources of information:

USDA (United States Department of Agriculture), NRCS (Natural Resource Conservation Service). 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

2.5. Competitive ability

- A. Poor competitor for limiting factors 0
- B. Moderately competitive for limiting factors 1
- C. Highly competitive for limiting factors and/or nitrogen fixing ability 3
- U. Unknown

Score

Documentation:

Evidence of competitive ability:

Reed canarygrass is highly competitive with other species (Lyons 1998, Rutledge and McLendon 1996).

Rational:

Phalaris arundinacea is tolerant of freezing temperatures and begins to grow very early in the spring.

Sources of information:

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Rutledge, C R. and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97pp. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/explant/explant.htm> (Version 15DEC98).

2.6. Forms dense thickets, climbing or smothering growth habit, or otherwise taller than the surrounding vegetation

- A. No 0
- B. Forms dense thickets 1
- C. Has climbing or smothering growth habit, or otherwise taller than the surrounding vegetation 2
- U. Unknown

Score

Documentation:

Describe grow form:

Reed canarygrass forms dense and impenetrable mats of vegetation (Lyons 1998). It can reach three to six feet in height (Welsh 1974).

Rational:

Sources of information:

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Welsh, S. L. 1974. Anderson's flora of Alaska and adjacent parts of Canada. Brigham University Press. 724 pp.

2.7. Germination requirements

- A. Requires open soil and disturbance to germinate 0
- B. Can germinate in vegetated areas but in a narrow range or in special conditions 2
- C. Can germinate in existing vegetation in a wide range of conditions 3
- U. Unknown

Score 2

Documentation:

Describe germination requirements:

Seeds of reed canarygrass germinate immediately after ripening, there are no known dormancy requirement (Apfelbaum and Sams 1987).

Rational:

Sources of information:

Apfelbaum, S.I. and C.E. Sams. 1987. Ecology and control of reed canary grass. (*Phalaris arundinacea* L.). Natural Areas Journal 7(2):69-74.

2.8. Other species in the genus invasive in Alaska or elsewhere

- A. No 0
- B. Yes 3
- U. Unknown

Score 3

Documentation:

Species:

Phalaris aquatica L., *P. brachystacys* Link, *P. canariensis* L., *P. caroliana* Walter, *P. minor* Retz., *P. paradoxa* L.

Sources of information:

Anderson, D. *Phalaris*. In J. C. Hickman (ed.) The Jepson Manual of Higher Plants of California. University of California Press, Berkley. Pp. 1400.

Welsh, S. L. 1974. Anderson's flora of Alaska and adjacent parts of Canada. Brigham University Press. 724 pp.

2.9. Aquatic, wetland, or riparian species

- A. Not invasive in wetland communities 0
- B. Invasive in riparian communities 1
- C. Invasive in wetland communities 3
- U. Unknown

Score 3

Documentation:

Describe type of habitat:

Reed canarygrass occurs in marshes, fens, wet meadows and prairies, floodplains, old fields, roadsides and ditches (Hutchison 1992, Lyons 1998, Rutledge and McLendon 1996).

Rational:

Sources of information:

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Hutchison, M. 1992. Vegetation management guideline: Reed Canary Grass (*Phalaris arundinacea* L.). Natural Areas Journal 12 (3):159.

Rutledge, C.R. and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97pp. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page.

<http://www.npwrc.usgs.gov/resource/othrdata/explant/explant.htm> (Version 15DEC98).

Total Possible 25

Total 20

3. DISTRIBUTION

3.1. Is the species highly domesticated or a weed of agriculture

- A. No 0
- B. Is occasionally an agricultural pest 2
- C. Has been grown deliberately, bred, or is known as a significant agricultural pest 4
- U. Unknown

Score 4

Documentation:

Identify reason for selection, or evidence of weedy history:

Reed canarygrass has a long agronomic history. It was cultivated for forage as early as 1830s. There are eleven reed canarygrass cultivars using as forage, ornamental and for erosion control (Hutchison 1992, Lyons 1998, Merigliano and Lesica 1998).

Rational:

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Sources of information:

Hutchison, M. 1992. Vegetation management guideline: reed canary grass (*Phalaris arundinacea* L.). Natural Areas Journal 12(3):159.

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Merigliano, M.F. and P. Lesica. 1998. The native status of reed canarygrass (*Phalaris arundinacea* L.) in the Inland Northwest, USA. Natural Areas Journal 18(3):223-230.

3.2. Known level of impact in natural areas

- A. Not known to cause impact in any other natural area 0
- B. Known to cause impacts in natural areas, but in dissimilar habitats and climate zones than exist in regions of Alaska 1
- C. Known to cause low impact in natural areas in similar habitats and climate zones to those present in Alaska 3
- D. Known to cause moderate impact in natural areas in similar habitat and climate zones 4
- E. Known to cause high impact in natural areas in similar habitat and climate zones 6
- U. Unknown

Score 6

Documentation:

Identify type of habitat and states or provinces where it occurs:

Reed canarygrass may threaten populations of many species in wetlands in Ohio, Oregon and Montana (Lyons 1998). It threatens upland oak savannas in south central Wisconsin (Snyder 1992). Canarygrass had invaded the emergent vascular plant communities in Iowa. Eleven species disappeared on these sites (Apfelbaum and Sams 1987).

Sources of information:

Apfelbaum, S.I. and C.E. Sams. 1987. Ecology and control of reed canary grass. (*Phalaris arundinacea* L.). Natural Areas Journal 7(2):69-74.

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Snyder, S.A. 1992. *Phalaris arundinacea*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [2004, May 5].

3.3. Role of anthropogenic and natural disturbance in establishment

- A. Requires anthropogenic disturbances to establish 0
- B. May occasionally establish in undisturbed areas but can readily establish in areas with natural disturbances 3
- C. Can establish independent of any known natural or anthropogenic disturbances 5
- U. Unknown

Score 4

Documentation:

Identify type of disturbance:

Reed canarygrass prefers disturbed areas, but can easily move into native wetlands. Invasion is promoted by disturbances such as ditching of wetlands and stream channelization, overgrazing, intentional planting, and alteration of water levels (Lyons 1998, WDNR 2004).

Rational:

Sources of information:

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Wisconsin Department of Natural Resources: abstract. Non-native plants. 2003. <http://www.dnr.state.wi.us> [2004, May 4].

3.4. Current global distribution

- A. Occurs in one or two continents or regions (e.g., Mediterranean region) 0
- B. Extends over three or more continents 3
- C. Extends over three or more continents, including successful introductions in arctic or subarctic regions 5
- U. Unknown

Score 5

Documentation:

Describe distribution:

Reed canarygrass is a native to Europe and some forms are likely to be native to Asia and North America as well. The present range extends throughout the Old and New Worlds primarily in northern latitudes (Hutchison 1992). It is introduced into New Zealand and Australia (Hultén 1968).

Rational:

Sources of information:

Hultén, E. 1968. Flora of Alaska and Neighboring Territories. Stanford University Press, Stanford, CA. 1008 p.

Hutchison, M. 1992. Vegetation management guideline: reed canary grass (*Phalaris arundinacea* L.). Natural Areas Journal 12(3):159.

3.5. Extent of the species U.S. range and/or occurrence of formal state or provincial listing

- A. 0-5% of the states 0
- B. 6-20% of the states 2
- C. 21-50%, and/or state listed as a problem weed (e.g., “Noxious,” or “Invasive”) in 1 state or Canadian province 4
- D. Greater than 50%, and/or identified as “Noxious” in 2 or more states or Canadian provinces 5
- U. Unknown

Score 5

Documentation:

Identify states invaded:

In the U.S. reed canarygrass is found from Alaska to Maryland, and south to Kentucky, Illinois, Missouri, Oklahoma, New Mexico, and Arkansas. It is absent from Mississippi, Alabama, Georgia, Florida, and Louisiana (Lyons 1998, USDA 2002).

Reed canary grass is a noxious weed in Washington (Class C). Invasive weed in Nebraska, Tennessee, Wisconsin (USDA 2002). It is a notorious global weed.

Rational:

Sources of information:

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

USDA (United States Department of Agriculture), NRCS (Natural Resource Conservation Service). 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Total Possible	25
Total	24

4. FEASIBILITY OF CONTROL

4.1. Seed banks

- A. Seeds remain viable in the soil for less than 3 years 0
- B. Seeds remain viable in the soil for between 3 and 5 years 2
- C. Seeds remain viable in the soil for 5 years and more 3
- U. Unknown

Score

0

Documentation:

Identify longevity of seed bank:

Seeds of reed canarygrass are short-lived. Some seeds germinated after ten days while others took three weeks. Rates of germination decrease through winter and are poor the following summer (Rutledge and McLendon 1996, WSDE 2003). Seeds stored in damp sand germinated after a year of alternating temperatures (Aphelbaum and Sams 1987).

Rational:

Sources of information:

Apfelbaum, S.I. and C.E. Sams. 1987. Ecology and control of reed canary grass. (*Phalaris arundinacea* L.). Natural Areas Journal 7(2):69-74.
 Rutledge, C R. and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97 pp. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page.
<http://www.npwrc.usgs.gov/resource/othrdata/explant/explant.htm> (Version 15DEC98).
 WSDE - Washington State Department of Ecology: Water Quality Home. Technical Information About *Phalaris arundinacea* (Reed Canarygrass).
<http://www.ecy.wa.gov/programs/wq/plants/weeds/index.html> [Dec 2, 2003].

4.2. Vegetative regeneration

- A. No resprouting following removal of aboveground growth 0
- B. Resprouting from ground-level meristems 1
- C. Resprouting from extensive underground system 2
- D. Any plant part is a viable propagule 3
- U. Unknown

Score

2

Documentation:

Describe vegetative response:

Rapid regrowth occurs from rhizomes after mechanical removal (WSDE 2003). The species will also produce roots and shoots from the nodes and culms (APMS 2004).

Rational:

Sources of information:

APMS – The Aquatic Plant Management Society. 2004. *Phalaris arundinacea* Reed Canarygrass. [June 2, 2004].
 WSDE - Washington State Department of Ecology: Water Quality Home. Technical Information About *Phalaris arundinacea* (Reed Canarygrass).
<http://www.ecy.wa.gov/programs/wq/plants/weeds/index.html> [Dec 2, 2003].

4.3. Level of effort required

- A. Management is not required (e.g., species does not persist without repeated anthropogenic disturbance) 0
- B. Management is relatively easy and inexpensive; requires a minor investment in human and financial resources 2
- C. Management requires a major short-term investment of human and financial resources, or a moderate long-term investment 3

- D. Management requires a major, long-term investment of human and financial resources 4
 U. Unknown

Score

4

Documentation:

Identify types of control methods and time-term required:

Control is difficult due to its extensive rhizomes. Mechanical methods may be too labor intensive and require a long-term time commitment. No herbicides are selective enough to be used in wetlands without the potential for injuring native species. Plants reestablish quickly from seeds after control methods are used (Apfelbaum and Sams 1987, Hutchison 1992, Lyons 1998, Rutledge and McLendon 1996).

Rational:

Sources of information:

Apfelbaum, S.I. and C.E. Sams. 1987. Ecology and control of reed canary grass. (*Phalaris arundinacea* L.). *Natural Areas Journal* 7(2):69-74.

Hutchison, M. 1992. Vegetation management guideline: reed canary grass (*Phalaris arundinacea* L.). *Natural Areas Journal* 12(3):159.

Lyons, K.E. 1998. Element stewardship abstract for *Phalaris arundinacea* L. Reed canarygrass. The Nature Conservancy. Arlington, Virginia.

Rutledge, C R. and T. McLendon. 1996. An Assessment of Exotic Plant Species of Rocky Mountain National Park. Department of Rangeland Ecosystem Science, Colorado State University. 97pp. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page.

<http://www.npwr.usgs.gov/resource/othrdata/explant/explant.htm> (Version 15DEC98).

Total Possible

10

Total

6

Total for 4 sections Possible

100

Total for 4 sections

83

References:

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