

# Vulpia bromoides & myuros

BARREN & RATTAIL FESCUE

**ENGLISH NAMES** Barren fescue<sup>1</sup> or brome fescue<sup>1</sup> & rattail fescue<sup>2</sup>

**SCIENTIFIC NAME** *Vulpia bromoides*<sup>1</sup> & *Vulpia myuros*<sup>2</sup>

**FAMILY** Poaceae or Gramineae (Grass)



Photo Credit: © JAMIE FENNEMAN/E-FLORA BC

Barren and rattail fescue are erect and, usually, simple annual winter grasses. The spikelets have long awns and the flowerheads appear brushlike.

## RANGE/KNOWN DISTRIBUTION

Barren and rattail fescue are native to Eurasia and northern Africa. They have been introduced and become naturalized around the globe including Europe, Asia, Africa, Australia, North, Central and South America and the sub-Antarctic islands. Barren and rattail fescue are common in southwestern British Columbia.

## IMPACTS ON GARRY OAK AND ASSOCIATED ECOSYSTEMS

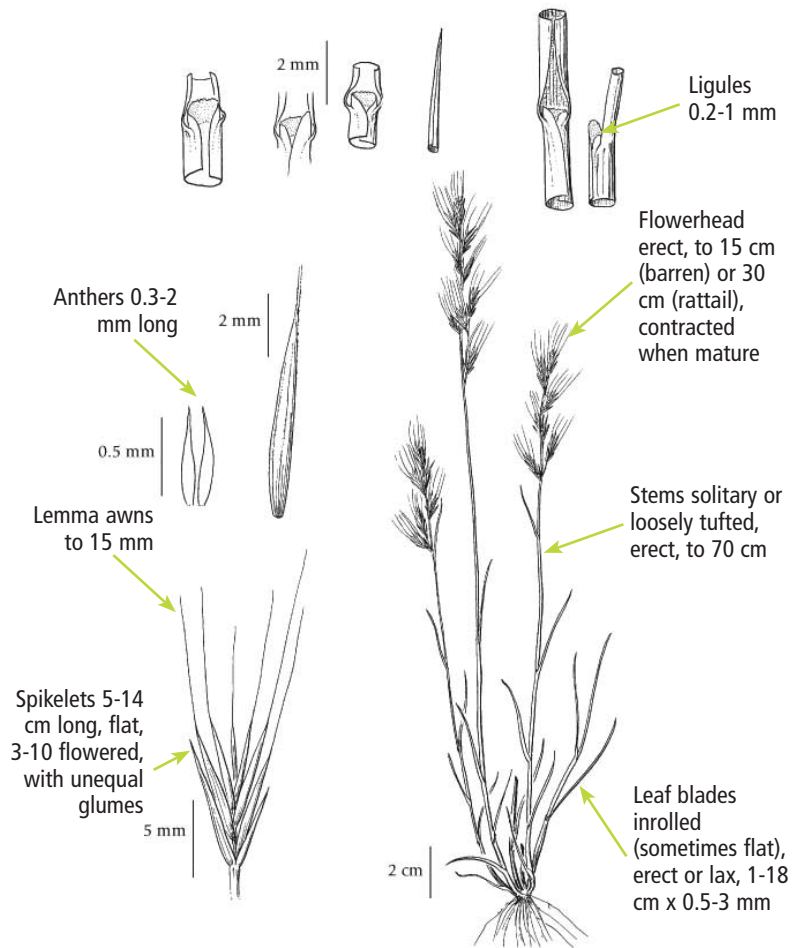
Non-native grasses are present in most Garry oak ecosystems and may cover a combined total of 50-80 percent of the landscape. Barren and rattail fescue produce a vast quantity of seeds and readily establish on bare ground, shading out native species. Competition for water continues throughout the year, becoming critical during the dry summer months. As the grasses die off, they form a dense litter layer that blocks light and thus suppresses the regeneration and establishment of native species. The litter also provides fuel and creates conditions for detrimental high-intensity fires. As it decomposes, nitrogen is added to the soil, favouring the growth of the non-native species. Rattail fescue produces phytotoxins, which increase in toxicity over the first two months of decomposition. These grasses can also be a medium for the introduction of harmful fungi, viruses and nematodes. Combined, these effects can significantly change the plant composition, reducing available habitats and food sources for some rare plant and animal species.

## FIELD DESCRIPTION

Barren and rattail fescue grow from fibrous roots and are simple or sometimes tufted. The leaves and sheaths are smooth or short-hairy and lack a keel. Leaf blades are in-rolled or sometimes flat.

INVASIVE SPECIES IN GARRY OAK AND ASSOCIATED ECOSYSTEMS IN BRITISH COLUMBIA

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Vascular Plants of the Pacific Northwest, Leo C. Hitchcock; Arthur Cronquist, and Mario Ownbey, illustrations by Jeanne R. Janish. Published by the University of Washington Press (1969).

Flowerheads are erect and contracted when mature. Spikelets are solitary, laterally compressed, and have distinct awns on the lemmas. The glumes are smooth, linear to lanceolate and unequal in length. Expert consultation may be required as grass identification can be difficult.

**LIFE HISTORY**

Barren and rattail fescue are annual winter grasses that reproduce by seed and are predominantly self-pollinated. They produce an abundance of seeds; less than 1% of which are carried forward from one year to the

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next. Surface seeds persist for no longer than 16 months, while buried seeds can remain viable for up to 2 years. A period of vernalization (ie. short days and cold temperatures) is required prior to flower and seed production.

### HABITAT

Barren and rattail fescue inhabit a wide range of habitats and climates but are most common in Mediterranean-type conditions. They are commonly found in low fertility soils, but prefer rich soils. In British Columbia they are found on dry to mesic soils and at elevations up to 900 metres. Typical habitats include rock outcrops, grasslands, shrublands, open forests, meadows and riparian areas as well as roadsides, pastures and waste areas.

### MANAGEMENT

Management of non-native grasses should focus on the removal of the grasses as well as the accumulated litter layer, while minimizing soil disturbance. Carefully identify native and non-native species before starting any treatment. If the infestation is already large, priority should be given to areas having highest conservation values, such as those with rare species.

**Develop a long-term, realistic program for invasive species removal before undertaking any work. Before taking action, obtain expert advice. Please refer to the introductory section of this manual.**

**PHYSICAL CONTROL:** Manual removal by hand pulling or careful hoeing can be effective in spring or early summer before the seed sets. However, this is very labour intensive and is feasible only when patches are small. Disturbance to the soil should be minimal.

**BIOLOGICAL CONTROL:** No known biological agents are available.

**CHEMICAL CONTROL:** Populations too large for manual removal can be managed by cautious application of non-selective herbicides. However, rattail brome has been found to become tolerant of typical application rates and increase following application. *Herbicides should only be used with extreme caution, and under expert advice, in sensitive Garry oak ecosystems.*

**OTHER TECHNIQUES:** Fire promotes seed regeneration in barren and

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rattail fescue, causing these grasses to dominate following burning. After an autumn burn, abundance was found to increase 100 fold. A combination of mowing and raking (to remove the litter) can have similar effects as burning and minimizes the risks associated with burning. Populations of barren fescue have been significantly reduced in sand dune restoration plots where non-native shrubs, litter and duff were removed.

**PREVENTATIVE MEASURES:** Soil disturbance and the use of fertilizers should be avoided in natural areas. Encourage plant nurseries, gardeners and farmers to stock and use native or non-invasive species, and to avoid using non-native grasses such as barren fescue. Equipment, clothing and animals should be checked and cleared for seeds when leaving an infested area.

**PERSISTENCE:** Buried seeds can persist for up to 2-3 years.

### SELECT REFERENCES

E-Flora. 2008. E-Flora BC: Electronic Atlas of the Plants of British Columbia. <http://www.eflora.bc.ca/>. Klinkenberg, Brian. (eds.) Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia. University of British Columbia, Vancouver, BC.

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Tozer, K. M., D. F. Chapman, P. E. Quigley, P. M. Dowling, R. D. Cousens, G. A. Kearney, and J. R. Sedcole. 2008. Controlling invasive annual grasses in grazed pastures: population dynamics and critical gap sizes. *Journal of Applied Ecology* 45: 1152-1159.

A comprehensive annotated bibliography of literature specific to barren and rattail fescue is available at [www.goert.ca](http://www.goert.ca).

For more information contact the Garry Oak Ecosystems Recovery Team, or see the website at [www.goert.ca](http://www.goert.ca)