



## Blue wildrye (*Elymus glaucus*)

Blue wildrye is an erect, rapidly developing, cool-season, native perennial bunchgrass<sup>[1]</sup> with long smooth, waxy stems. This bluish tufted grass can grow to shoulder height (.5-1.5m<sup>[2]</sup>) from fibrous roots or short rhizomes (although in the Pacific Northwest blue wildrye is rarely rhizomatous<sup>[3]</sup>). Green stems slowly turn straw colored in the fall, dropping seeds and leaving thin twisted empty stalks behind until another growing season.

### Range

Blue wildrye is the most common and widely distributed of the western wildryes (*Elymus* spp.)<sup>[4]</sup>. It occurs throughout western North America from Alaska to Ontario southward to New Mexico, northern Arizona, California, and Mexico.<sup>1</sup> Introduced in Eastern and Central North America.<sup>[5]</sup>

### Climate, elevation

Blue wildrye occurs in cool temperate and cool mesothermal climates, decreasing in cover with increasing precipitation and elevation.<sup>4</sup> It can be found from coastal to subalpine elevations up to 11,000 feet.<sup>[6][7][8]</sup>

### Local occurrence

Blue wildrye occurs the length of the Pacific Northwest, mostly west of the Coast-Cascade

Mountain crest<sup>2</sup> in prairies, open woods, thickets, and moist or dry hillsides.<sup>[9]</sup> Typically occurring in grasslands in northern and southern portions of the Puget Lowland and the adjacent Georgia Depression of B.C.<sup>[10]</sup> (two subspecies are found in B.C.).

### Habitat preferences

Blue wildrye occurs as a minor seral component throughout a wide range of nonforested and forested communities.<sup>1</sup> Blue wildrye occurs on moderately dry to fresh, nitrogen-rich soils. It reaches its greatest abundance in broad-leaved forests on water-receiving (floodplain and stream-edge) sites.<sup>9</sup> is also drought tolerant<sup>7</sup> and persists on sites characterized by low fertility and well-drained soils, with textures ranging from clayey loam to sandy loam.<sup>[11][12]</sup>

### Plant strategy

Blue wildrye is a common early seral species. While sometimes locally abundant, it rarely forms dense, pure stands. Merrill and others report this species in early successional stands in the Mount St. Helens “blast zone” as a common component of elk diets 5 years post-eruption.<sup>[13]</sup> Although blue wildrye rapidly establishes and increases under early seral conditions, numbers may decline dramatically after 3 to 4 years without further disturbance.<sup>12</sup>

### Associated species

Alder (*Alnus spp.*), maple (*Acer spp.*) sagebrush (*Artemisia spp.*) brome grass (*Bromus spp.*), bluegrasses (*Poa spp.*), meadow barley (*Hordeum brachyantherum*), cinquefoil (*Potentilla spp.*) strawberry (*Fragaria spp.*), yarrow (*Achillea spp.*) and asters (*Aster spp.*)<sup>[14]</sup>

### Collected as

seed; may also be propagated by division.<sup>[15]</sup>

### Collection guidelines

Seed ripens in early July in the foothills and in late August at higher elevations.<sup>4</sup> Hassell and others recommend only using seed from local sources, preferably from within 300 miles (500 km) and 1,500 feet (500 m) elevation of the intended site.<sup>12</sup> Libby and Rodrigues discuss the potential for ‘genetic contamination’ of native populations of blue wildrye by commercially produced seed. They question the use of single collection over a very large area.<sup>[16]</sup>

### Seed germination

No pretreatment is required for adequate germination. Germination is rapid, usually within six to ten days.<sup>9</sup> Data summarized by Fulbright and others indicate that seeds have a germinative

capacity of 80 to 85%<sup>[17]</sup>

### **Seed life**

Seeds remain viable for 2 to 5 year<sup>[18]</sup>, but one studied showed percentage germination of mature, cleaned seed stored at 59 to 86F dropped sharply after 2 years.<sup>[19]</sup>

### **Seed storage**

Harvest seed by hand and clean by gently deawning with brush machine or air screen machine. Store clean seeds under low temperatures and low humidity.<sup>18</sup>

### **Propagation**

Sow directly in the fall to a depth of .6-1 cm at a density of 100-160 seeds per square meter<sup>[20]</sup> and cover with sawdust mulch. Spring sow from March through early May. A nitrogen starter fertilizer is recommended, and a complete fertilizer when seedlings are well established.<sup>[21]</sup>

### **Soil**

The seedbed should be moist, fine textured, very firm and weed free.<sup>9</sup> Blue wildrye is more successful in unmulched plots than in mulched plots.<sup>[22]</sup> Plants are moderately sensitive to saline soils and are not tolerant of shallow soils.<sup>12</sup>

### **Planting density**

Commonly grows in tufts of 4inches or less.<sup>2</sup> Plant in 1 foot centers for dense cover.

### **Care requirements**

Like other bunchgrasses, water seedlings with at least 2 liters of water on the day of planting and/or water as needed during the first six months after out planting.

### **Rate of growth**

Relatively rapid seedling growth and establishment, however, stands begin to decline dramatically 3-4 years<sup>12, [23]</sup>

**Data compiled by Amy Lambert, April 29, 2003**

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<sup>[1]</sup> FEIS website: <http://www.fs.fed.us/database/feis/plants/graminoid/elygla/introductory.html>

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