

Washoe Germplasm Basin Wildrye

Description

Basin wildrye *Leymus cinereus* (Scribn. & Merr.) A. Love is a tall, coarse, robust, perennial bunchgrass native to the Great Plains and Intermountain regions of the western United States. It is a long-lived, cool season grass with extensive fibrous roots and a few short rhizomes. Basin wildrye clumps may reach 3 feet in diameter and grow 3 to 10 feet tall. The leaf blades are long, wide, and flat with long, pointed, clasping auricles. It has a prominent membranous ligule. The reproductive stems are dense, stout, and strongly erect. Seedheads are 6 to 10 inches long. Growing points are located 10 to 12 inches above the soil surface. Seeds mature from mid-August to September.

Uses

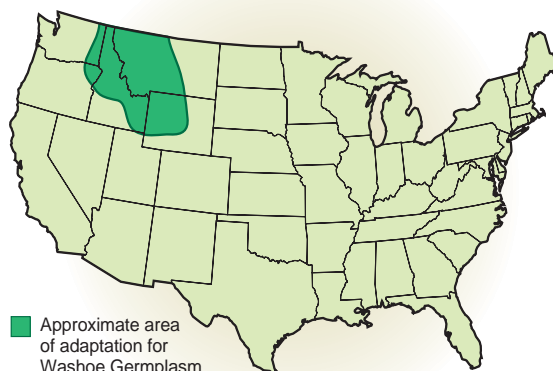
Grazing/rangeland: Basin wildrye is considered good forage for cattle and fair for sheep. It provides abundant forage in the early spring and furnishes important winter forage and protection. It is not recommended for heavy grazing in late spring or summer due to an elevated growing point. Grazing during active growth can damage the growing point thereby reducing plant vigor.

Wildlife: Basin wildrye provides excellent forage and cover for many wildlife species. It is readily grazed in most seasons but is critical winter forage for elk and deer. It provides cover and thermal protection for many birds and small mammals and nesting sites for many types of birds.

Erosion control/reclamation: Washoe germplasm basin wildrye was selected for its superior performance compared to other basin wildrye populations on moderately acidic and heavy metal contaminated sites. Its extensive fibrous root system makes it an excellent soil stabilizer. It has a high tolerance to drought and good seedling vigor. Its tall, robust stature also makes it an effective wind barrier.

Origin

Washoe germplasm basin wildrye was originally collected in Deer Lodge County, Montana, on October 27, 1998. The collection site is within the Anaconda Smelter Superfund Site, approximately 1.25 miles southwest of the defunct Washoe smelter stack at an elevation of 6,132 feet. Seed was collected from more than 50 plants on a south-facing, 15 percent slope with gravelly, sandy loam textured soil. Aerial emissions from past copper smelting operations have resulted in elevated lev-



Approximate area of adaptation for Washoe Germplasm Basin Wildrye

els of heavy metals and sulfur compounds in the soil at the collection site. Soil pH at the collection site ranged from 4.6 to 5.6. Arsenic, cadmium, copper, lead, and zinc concentrations ranged from moderate to excessive. Precipitation in the area averages 12 to 14 inches annually, with most precipitation occurring during the spring and summer months. The collection site is within USDA hardiness zone 4a.

Establishment

Adaptation: Washoe germplasm performs well in loamy to sandy soils in the foothills of the Anaconda-Pintler Mountains in 12 to 14 inch average annual precipitation zones. It is expected to perform well at sites with similar edaphic, climatic, and topographic conditions in the foothills of the northern Rocky Mountains. It may perform well at elevations from 2,000 to 9,000 feet in plains, foothills, and montane zones from British Columbia and Alberta to New Mexico that receive an average annual precipitation of 8 to 20 inches.

Planting: This species should be seeded with a disk or furrow drill in a firm, weed-free seedbed at a depth of 1/4 to 3/4 inch on medium to fine textured soil and 1 inch or less on coarse textured soils. When seeding this selection as a monoculture, a seeding rate of 6 pounds Pure Live Seed (PLS) per acre is recommended or 24 PLS per square foot. When used in a mixture, adjust the seeding rate to the desired percentage of mix. This selection has approximately 176,000 seeds per pound.

Management

Basin wildrye begins growth in the early spring and matures by late summer in the second growing season. It does not compete well with aggressive introduced grasses during the establishment period, but establishes well with other slower developing native grasses. It should not be grazed until the fall of the second growing season when plants are at least 10 inches tall due to the elevated growing point. Established stands can be grazed in late spring or fall and can tolerate heavy trampling and grazing when dormant.

Environmental concerns: Basin wildrye is a fairly slow establishing species that spreads mainly by seed. It is not considered invasive or weedy, but can encroach on adjoining vegetation types under ideal environmental conditions.

Seed Production

Seeds should be sown at a rate of 24 PLS per linear foot of row. Row spacing for this species may vary depending on planting and cultivation equipment available. At 30-inch row spacing, the recommended seeding rate is 2.4 pounds PLS per acre. A 36-inch row spacing will require a seeding rate of 2.0 pounds PLS per acre and 48-inch row spacing requires 1.5 pounds PLS per acre. This species shatters at maturity so must be watched closely for ripeness. Direct combining is the most common way of harvesting basin wildrye; however, swathing and field drying before combining is also done. Cut only the upper portion of the plant stalk, leaving 24 to 36 inches of stubble so that biomass does not clog the combine. Under irrigation, basin wildrye will produce 250 to 500 lb/acre of seed. Stand longevity averages 5 to 7 years.

Basin Wildrye Releases

Washoe Germplasm basin wildrye is a Pre-varietal Selected Class release, which has had sufficient testing to show promise but not proof of genetic superiority or distinctive traits. It is a selection of naturally occurring germplasm originating near Anaconda, Montana. Other basin wildrye releases include 'Magnar' and 'Trailhead'. Magnar was released in 1979 by the Aberdeen Plant Materials Center and is adapted to the Northwest and Intermountain region. Trailhead was released in 1991 by the Bridger Plant Materials Center and is adapted to the Intermountain, Great Basin, and northern Great Plains regions.

Distribution

The NRCS Plant Materials Center in Bridger, Montana, maintains foundation-quality (G1) seed of Washoe germplasm. Seed is distributed through the Seed Stocks Program, Department of Plant Sciences, P.O. Box 173150, Montana State University, Bozeman, MT 59717-3150.

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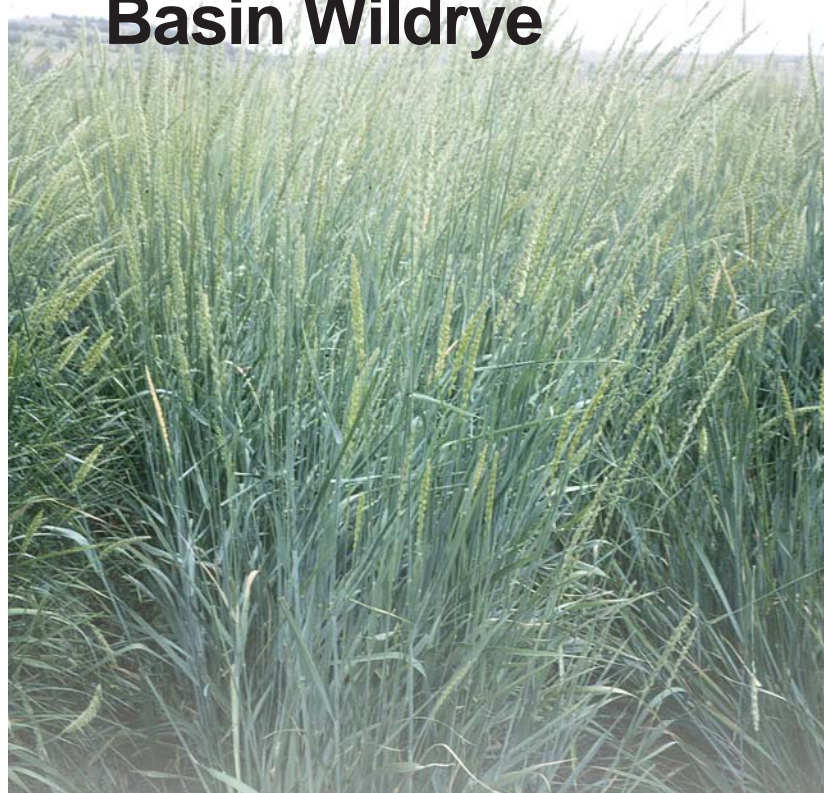
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**A
Conservation
Plant
for Montana
and Wyoming**

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Bridger, MT

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