

Appendix 3

Cultivar profiles and maps

Maps are available in color at: www.nativeseednetwork.org/resources/pm_list.php.



Grass Cultivar Profile

Arlington

Scientific Name: *Elymus glaucus* Buckl. ssp. *glaucus*

Common Name: Blue wildrye

Plant Symbol: ELGLG

Plant Introduction Number: PI 527333

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Elymus</i> L.—wildrye P.
Species	<i>Elymus glaucus</i> Buckl.—blue wildrye P.
Subspecies	<i>Elymus glaucus</i> Buckl. ssp. <i>glaucus</i> —blue wildrye P.

Collection Location: 2 mi north of Arlington, WA (T32N, R5E, Sec 21).

Collection Date: August 1979.

Source: Originated from a wild population growing at an elevation of 200 ft near the city of Arlington, Snohomish County, WA.

Selected by: S.M. Lambert and D.C. Darris, Plant Materials Center, NRCS, Corvallis, OR.

Development: ‘Arlington’ originated from a wild stand; it was not intentionally bred or hybridized but was selected in comparison to 128 populations from western Oregon, western Washington, and northwestern California, in a 4-year, non-replicated study at the Corvallis Plant Materials Center (PMC). Also, replicated experiments were conducted under sward conditions with other blue wildrye sources at the Corvallis PMC and the Skagit Valley Plant Center in northwestern Washington. Selected for agronomic performance and uniformity (0–2% variants), good seed yield, good growth vigor first 2–3 years, light blue color in summer (glaucous stems), short culm height, weak awns, and late maturation (4–9 days later compared to other populations). ‘Arlington’ was released in 1995 cooperatively by the Oregon Agricultural Experiment Station, Corvallis, OR; Natural Resources Conservation Service (NRCS); and Agricultural Research Center, Pullman, WA.

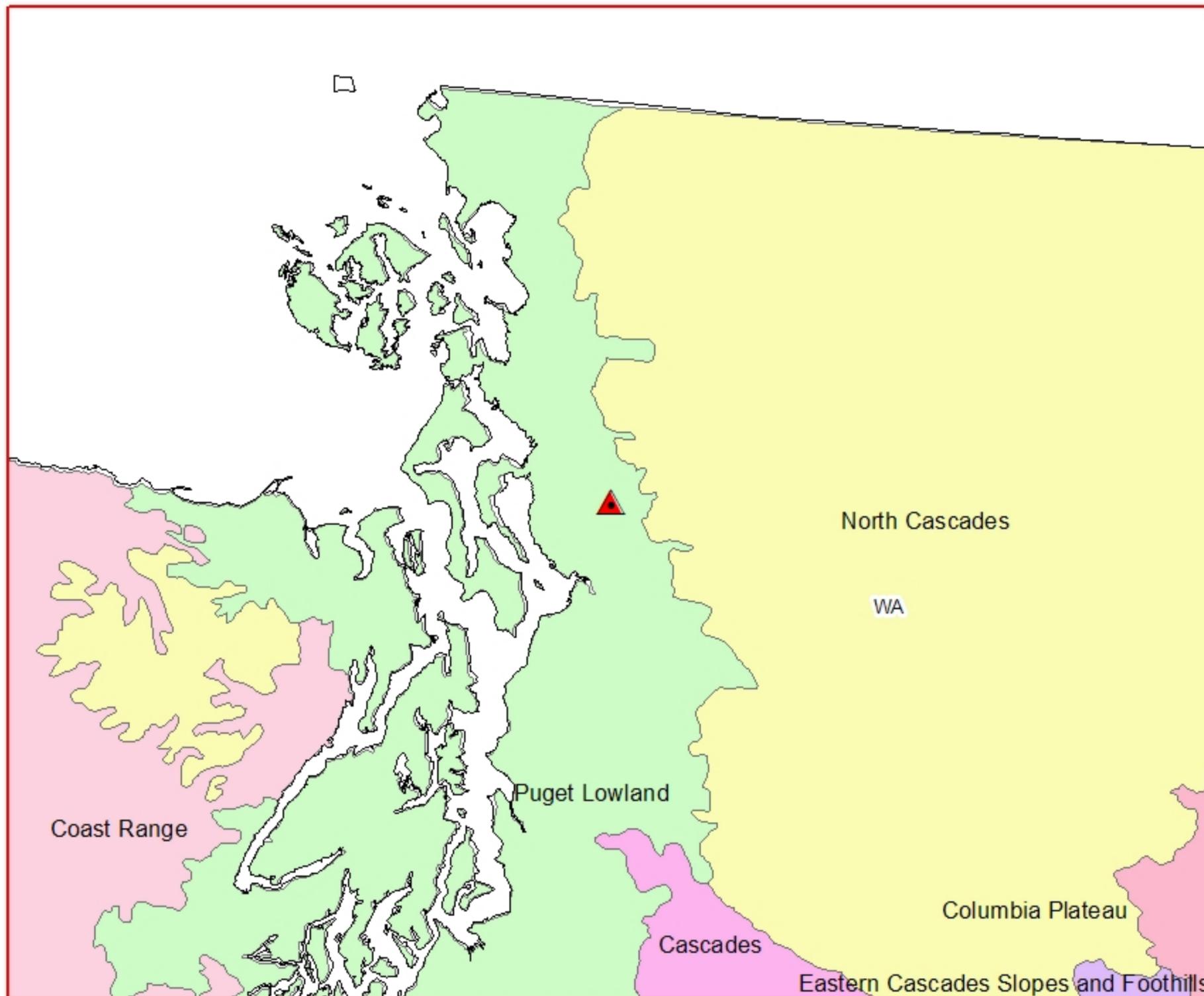
Description: Cool season, short-lived (3–8 years), perennial bunchgrass. Self-fertile and primarily self-pollinated (60–95%). Leaf blades glabrous, slightly glaucous, flat, usually lax, width 2–4 in. Leaf sheaths strongly glaucous, lower ones purplish tinged. Blue-green color due to white waxy coating on the foliage and stems. Long, narrow seedheads have bearded spikes with awns and take a purple hue when ripening begins. The variety can be distinguished from other populations tested by its combination of (1) 3–5-day later maturity, (2) light blue-green stem and foliage color in summer, (3) finer stems, and (4) slightly shorter culm height (range 24–55 in, avg. 41 in). Fewer visual disease symptoms and leaf rust (*Puccinea* sp.) than other populations and less leaf senescence at maturity.

Mean seed weight 160,000 seeds/lb, avg. of 3 lots. Mean seed yield 414 lbs/ac, range 338–1158.

References:

1. Darris DC. 2001. Arlington and Elkton blue wildrye. USDA, NRCS.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/cgi-bin/npgs/html/achtml.pl?1422269>. Accessed 4/22/03.
3. Lambert SM and Darris DC. 1997. Registration of ‘Arlington’ blue wildrye. *Crop Science* 37:1977.
4. USDA, NRCS, and Oregon State University Agricultural Experiment Station, and Washington State University Agriculture Research Center. 1995. Notice of release of ‘Arlington’ blue wildrye.

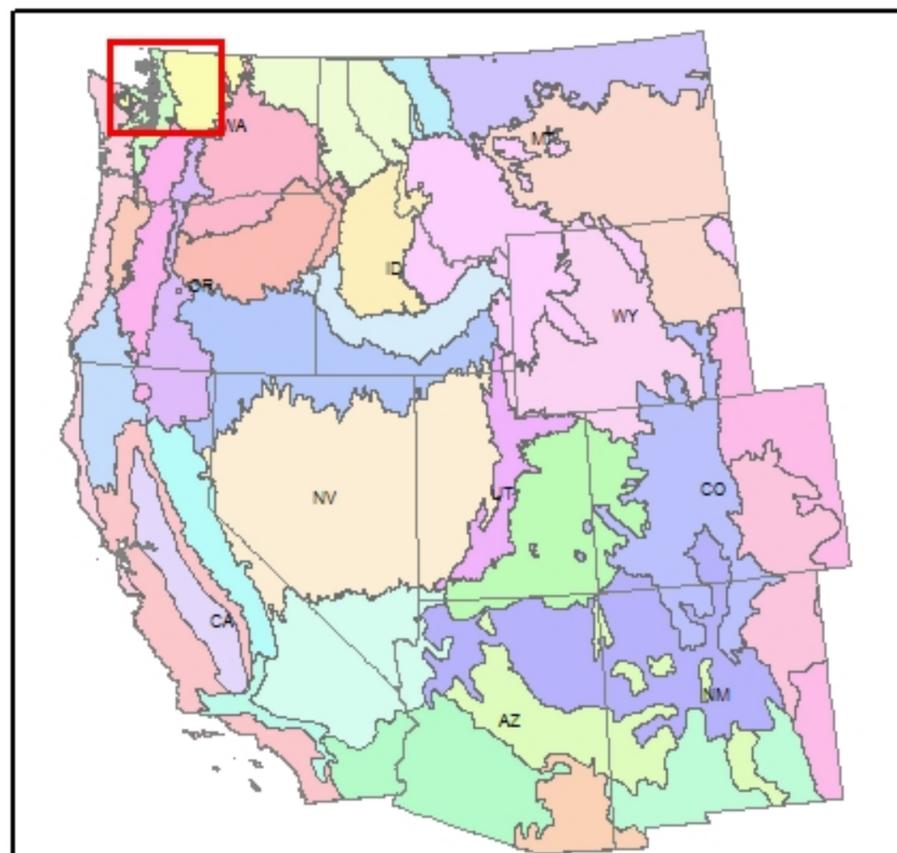
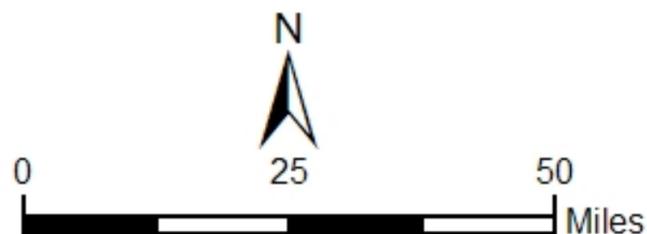
'Arlington' Blue Wildrye



1:1,531,820 Shown with Level III Ecoregions

▲ Collection location

Originated from a wild population growing at an elevation of 200 ft near the city of Arlington in Snohomish County, WA.





Grass Cultivar Profile

Bromar

Scientific Name: *Bromus marginatus* Nees ex Steud.

Common Name: Mountain brome

Plant Symbol: BRMA

Plant Introduction Number: PI 578552

Taxonomy:

Family	<i>Poaceae</i> —Grass Family
Genus	<i>Bromus</i> L.—brome
Species	<i>Bromus marginatus</i> Nees ex Steud.— mountain brome

Collection Location: Pullman, WA.

Collection Date: 1933.

Source: Collection made at Washington State University (then called the State College of Washington), Pullman, Whitman County, WA, and assigned accession number WN-439; Selection P-3368 from this accession used in developing Bromar.

Selected by: A.L. Hafenrichter, A.G. Law, J.L. Schwindiman, Plant Materials Center, SCS, Corvallis, OR.

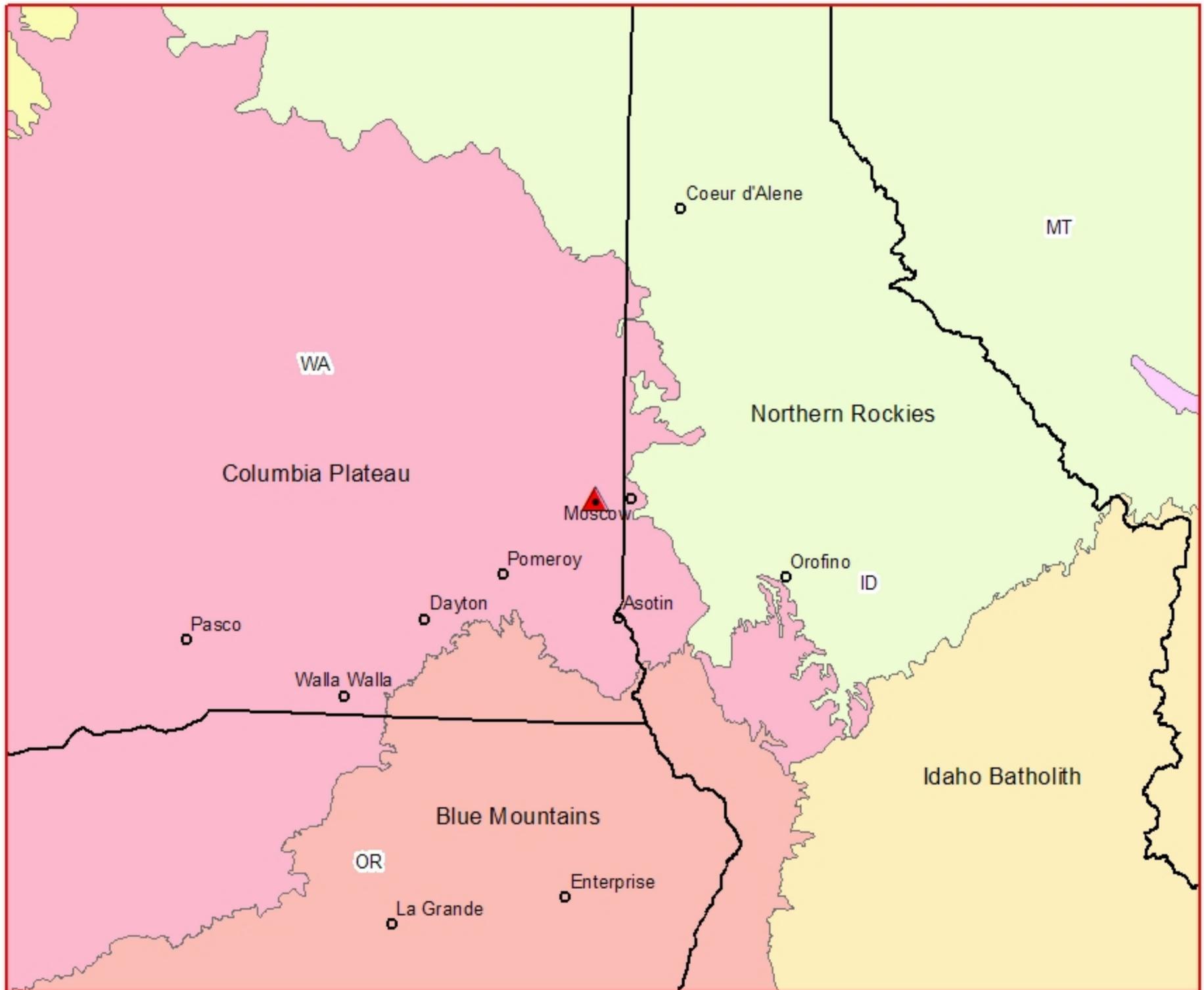
Development: Bromar originated as a mass selection from seed collected in 1933 on the campus of what is now Washington State University. The original collection was grown in trial rows as Washington Experiment Station No. 439, and plants possessing what appeared to be desirable characteristics were selected for initial seed increase to be used in further comparative trials. Over a 10-year period, forage and seed yield and time of maturity data were obtained in pure stands and with sweetclover in numerous trials at Pullman, and at other state experiment stations and in farm plantings in comparison with commercial strains. Reaction to head smut was obtained by inoculation tests. Bromar was developed for use in sweetclover-grass mixtures for pasture and green mature. It was selected for higher hay and seed production over commercially available mountain brome. In 1946, 'Bromar' was cooperatively released by the Agricultural Experiment Stations in Idaho, Oregon, and Washington; Plant Material Center, Pullman, WA; and Agricultural Research Service (ARS), Plant Science Research Division.

Description: Rapidly developing, late-maturing, short-lived, cool season, leafy perennial bunchgrass. Leaves hairy, 6–12 in long; 4–8-in in panicles erect. Flattened spikelets have 5–9 florets. Up to 4 ft tall, erect, vigorous, with medium stems and abundant, broad, well-distributed leaves. Compared to commercial mountain brome, 'Bromar' is more disease resistant (especially to head smut), taller, leafier, later in maturity (by 2 weeks), earlier spring recovery, more seeding vigor.

References:

1. Law AG and Schwendiman JL. 1946. Bromar mountain brome. Pullman, WA: State College of Washington Institute of Agricultural Sciences, Agricultural Experiment Station.
2. Myers, W.M. 1951. Registration of varieties and strains of brome (*Bromus* spp.). *Agronomy Journal* 43(5) 237.
3. Pratt M, Bowns J, Rasmussen A. Range Plants of Utah. Utah State University. <http://extension.usu.edu/coop/natres/range/index.htm>. Last updated 7/20/02. Accessed 4/22/03.
4. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/cgi-bin/npgs/html/achtml.pl?1473523>. Accessed 4/22/03.
5. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. 70874-4490. <http://plants.usda.gov>. Accessed 4/22/03.

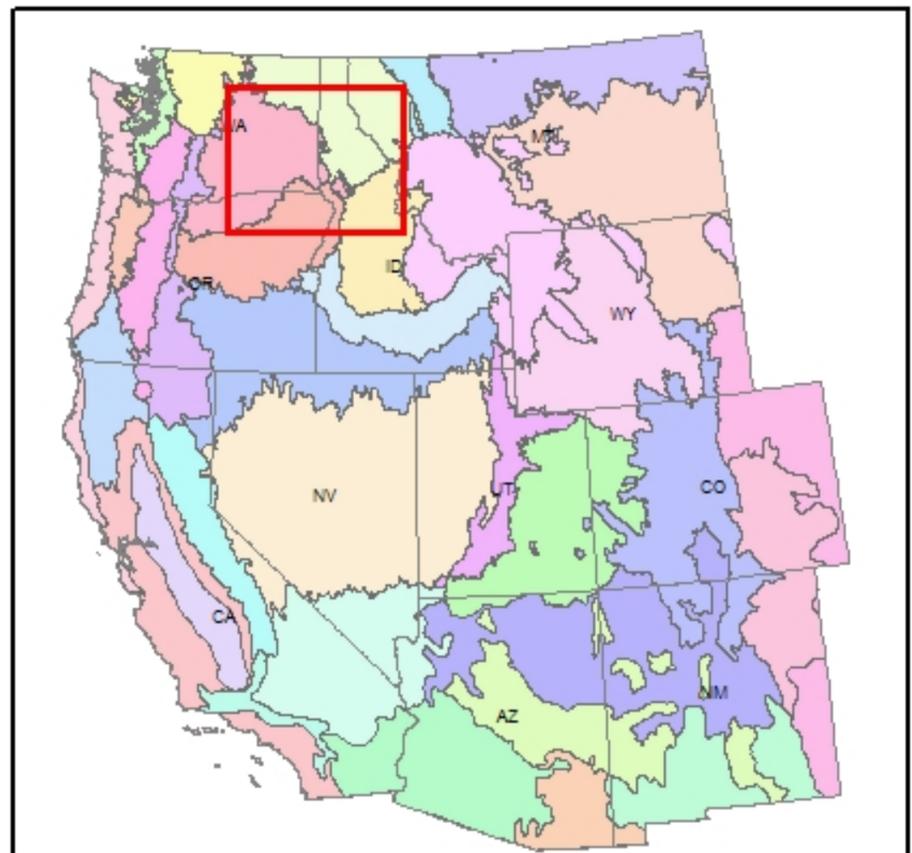
'Bromar' Mountain Brome



1:2,437,344 Shown with Level III Ecoregions

▲ Collection Location

Native collection made at Pullman in 1933 and assigned accession number WN-439. Selection P-3368 from this accession used in developing Bromar.





Grass Cultivar Profile

Canbar

Scientific Name: *Poa secunda* J. Presl

Common Name: Sandberg bluegrass

Plant Symbol: POSE

Plant Introduction Number: PI 477005

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Poa</i> L.—bluegrass
Species	<i>Poa secunda</i> J. Presl—Sandberg bluegrass

Collection Location: Blue Mountains, WA.

Collection Date: Unspecified.

Source: Native plant collection made at moderate elevations in the Blue Mountains, Columbia County, WA.

Selected by: J.L. Schwendiman, Plant Materials Center, SCS, Pullman, WA.

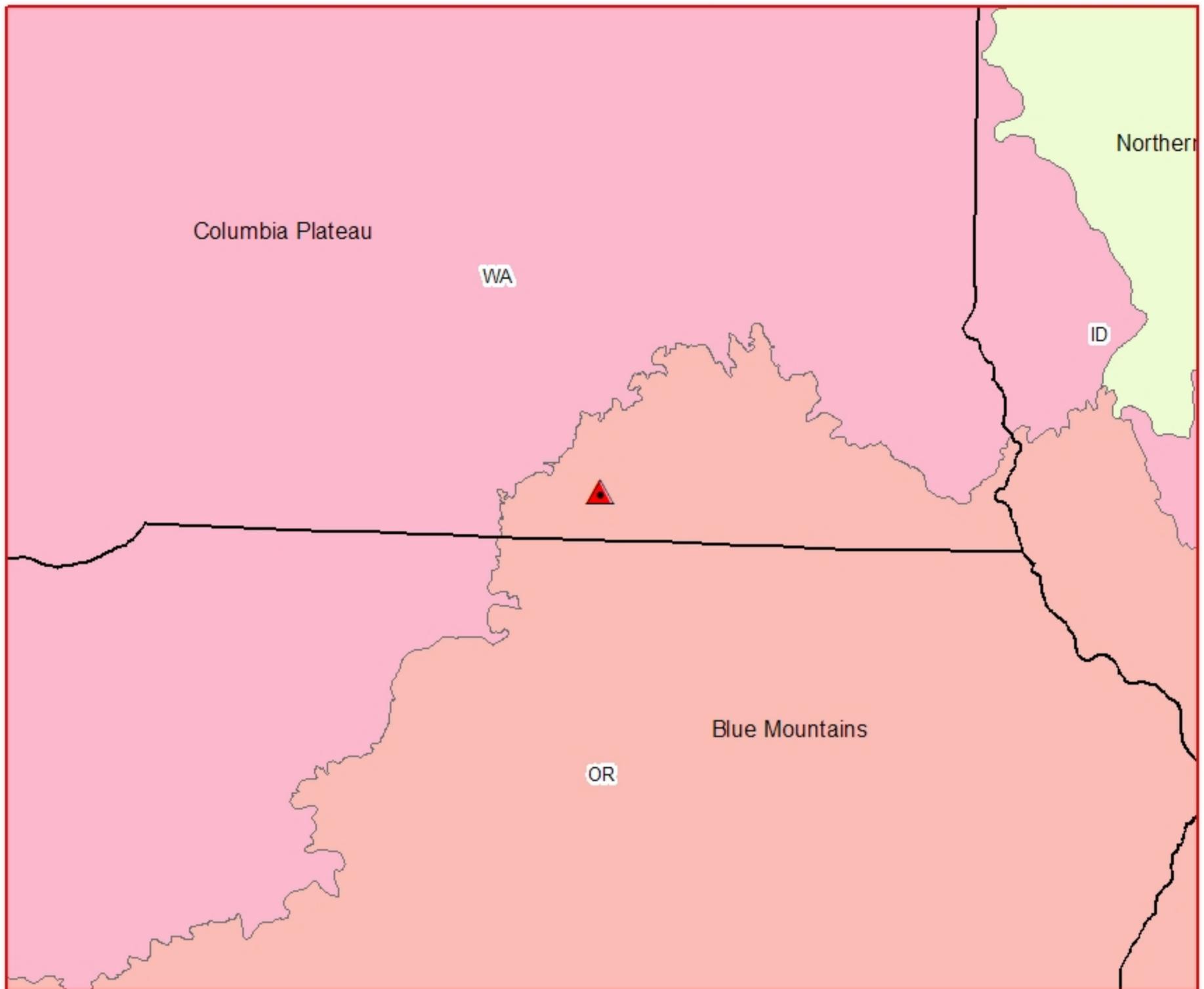
Development: ‘Canbar’ was developed from a wild stand of native *Poa secunda*, then named Canby bluegrass, *Poa canbyi* (Scribn) ‘Piper’. It was selected in 1979 as the most vigorous accession from 72 strains. Selection was made primarily for drought tolerance, cooperatively by the Idaho and Oregon Experiment Stations and the Soil Conservation Service (SCS) Plant Materials Center, Pullman, WA.

Description: Long-lived, cool-season perennial bunchgrass. Small, with abundant flat basal leaves to 18 in long. It produces vigorous early spring growth, sets seed in mid-spring and plants become dormant in late spring. Grows semi-erect; numerous long stems (16–18 in height). Abundant seedheads. Apomitic (asexual reproduction by seed).

References:

1. Alderson, JS and Sharp WC. 1995. Grass varieties in the United States. Agriculture Handbook No. 170. USDA, SCS, Washington DC. http://www.forages.css.orst.edu/Topics/Species/Grasses/Grass_Varieties/. Accessed 7/20/04.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network-(GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
3. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. National Plant Data Center. Baton Rouge, LA. <http://plants.usda.gov>. Accessed 4/22/03.
4. USDA, SCS, Ecological Sciences and Technology Division; Idaho Agricultural Experiment Station; and Oregon Agricultural Experiment Station. 1979. Notice of release of Canbar Canby bluegrass. <http://plant-materials.nrcs.usda.gov/wapmc/releases.html>. Accessed 8/12/04.
5. USDA, SCS, Plant Materials Center. Sandberg bluegrass. http://plants.usda.gov/factsheet/pdf/fs_pose.pdf. Accessed 7/20/04.

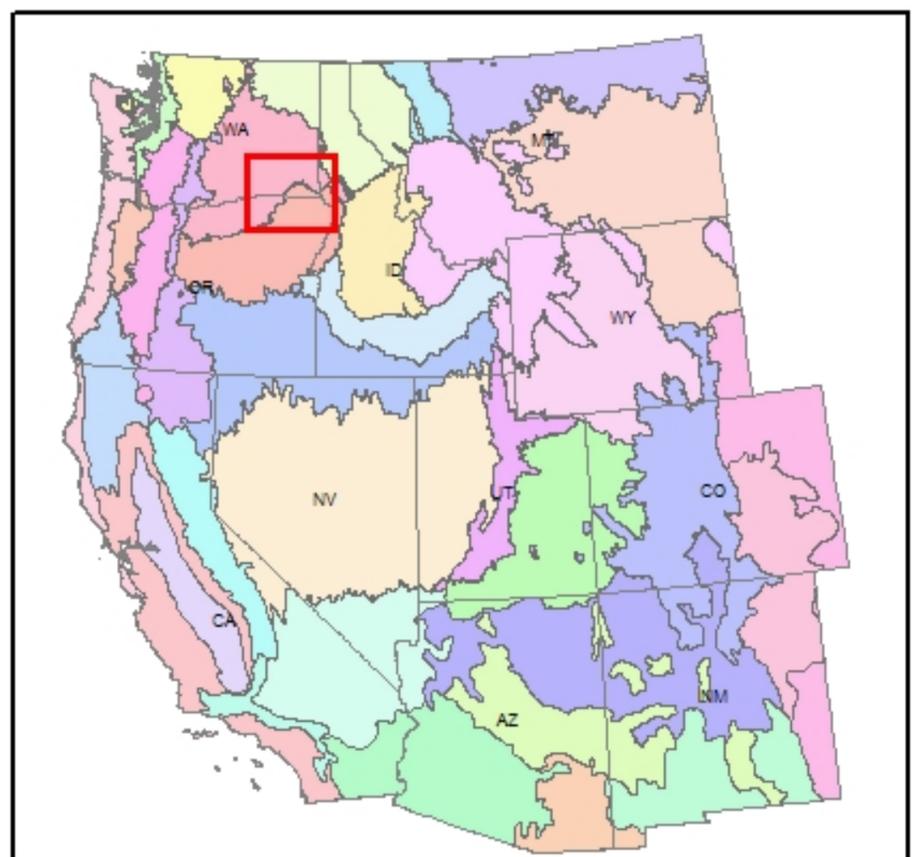
'Canbar' Canby Brome



1:1,213,147 Shown with Level III Ecoregions

▲ Collection location

Collection from Blue Mountains, WA.





Grass Cultivar Profile

Covar

Scientific Name: *Festuca valesiaca*

Common Name: False sheep fescue

Plant Symbol: FEOV

Plant Introduction Number: PI 578733

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Festuca</i> L.—fescue
Species	<i>Festuca valesiaca</i> Schleich.ex Gaudin or <i>F. pseudovina</i> Hackel ex Wiesb.— false sheep fescue

Collection Location: Konya, Turkey.

Collection Date: October 21, 1934.

Source: The original collection was made from plants growing on a dry rocky mountain 3 mi south of Konya, Turkey, and was identified as *F. ovina*, sheep fescue. Not native to the U.S.

Selected by: J.L. Schwendiman, Plant Materials Center, SCS [NRCS], Pullman, WA.

Development: ‘Covar’ was developed from materials (NPGS # PI 109497) collected in Konya, Turkey, for use as a cover grass. Selections were from spaced plantings in which aberrant types were eliminated. It was compared with 63 individual strains from 15 countries, at Pullman and Lind, WA. Released cooperatively in 1977 by the Plant Sciences Division, USDA Soil Conservation Service (SCS), and the Agricultural Experiment Stations of Washington, Oregon, and Idaho. Collection is maintained by the Western Regional Plant Introduction Station, Pullman, WA.

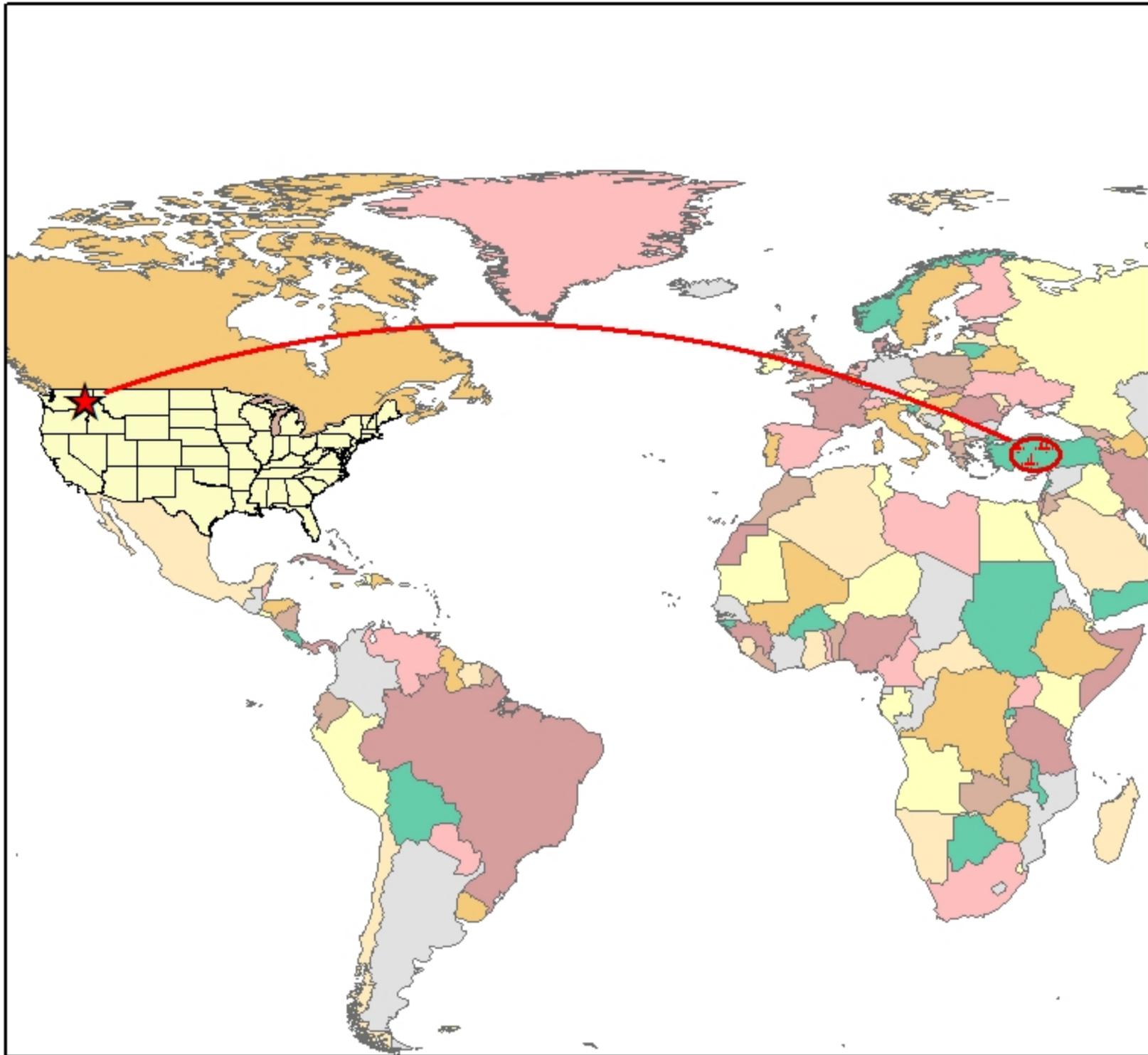
The original collection was identified as sheep fescue but this plant species does not occur in Turkey. This mistake is understandable since there is much taxonomic confusion concerning the genus *Festuca* and the species *F. valesiaca* in particular (Aiken et al. 1996). In a study of fine fescue species in which flow cytometry was used to measure DNA content (Huff and Palazzo 1998), a sample of ‘Covar’ was consistent with *F. valesiaca*, which has 14 chromosomes; *F. ovina* has 28 chromosomes. ‘Covar’ continues to be identified and sold as sheep fescue in the U.S.

Description: Long-lived, cool-season, perennial bunchgrass. Dwarf, blue-green, densely tufted, erect growing. When mature, reaches 6–12 in height. Leaves narrow, dense, short, stiff, basal, and abundant. Shorter, more uniform, and deeper blue than other sheep fescue selections. Prolific seed producers but seedlings develop slowly. Plants tenacious, heavy root-producing.

References:

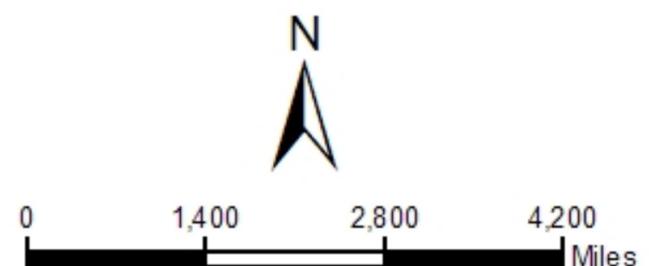
1. Aiken, G., M.J. Dallwitz, C.L. McJannet, and L.L. Consaul. 1996 onwards. *Festuca* of North America: Descriptions, Illustrations, Identification, and Information Retrieval. Version: 12 September 2000. <http://biodiversity.uno.edu/delta/>. Accessed 12/03/04.
2. Huff, D.R., and A.J. Palazzo. 1998. Fine fescue species determination by laser flow cytometry. *Crop Sci.* 38:445–450.
3. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03, 12/03/04.
4. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. http://www.ars-grin.gov/cgi-bin/npgs/html/acc_search.pl?accid=Covar. Accessed 4/22/03.
5. Robins J, Davis JR, and Miller PJ. 1977. Notice of release of Covar sheep fescue. Pullman, WA: USDA, SCS; Washington Agricultural Research Center, and Corvallis, OR: Oregon Agricultural Experiment Station.

'Covar' Sheep Fescue



PI 109497 collected from south of Konya, Turkey.
Introduced by Westover-Enlow expedition in 1934.
Habitat: From dry rocky mountain.

★ Selected and released by the Plant Materials
Center, Pullman, WA.





Grass Cultivar Profile

Critana

Scientific Name: *Elymus lanceolatus* (Scribn. & J.G. Sm.) Gould ssp. *lanceolatus*

Common Name: Thickspike or streambank wheatgrass

Plant Symbol: ELLAL

Plant Introduction Number: PI 469235

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Elymus</i> L.—wildrye
Species	<i>Elymus lanceolatus</i> (Scribn. & J.G. Sm.) Gould—thickspike wheatgrass
Subspecies	<i>Elymus lanceolatus</i> (Scribn. & J.G. Sm.) Gould ssp. <i>lanceolatus</i> —thickspike or streambank wheatgrass

Collection Location: Near Havre, MT.

Collection Date: 1960.

Source: Original collections were collected from plants growing on several roadside cuts on medium- to fine-textured soils near Havre, MT..

Selected by: D.E. Ryerson, Montana State University. Identified as *Agropyron dasystachym* (Hook) Scribn.

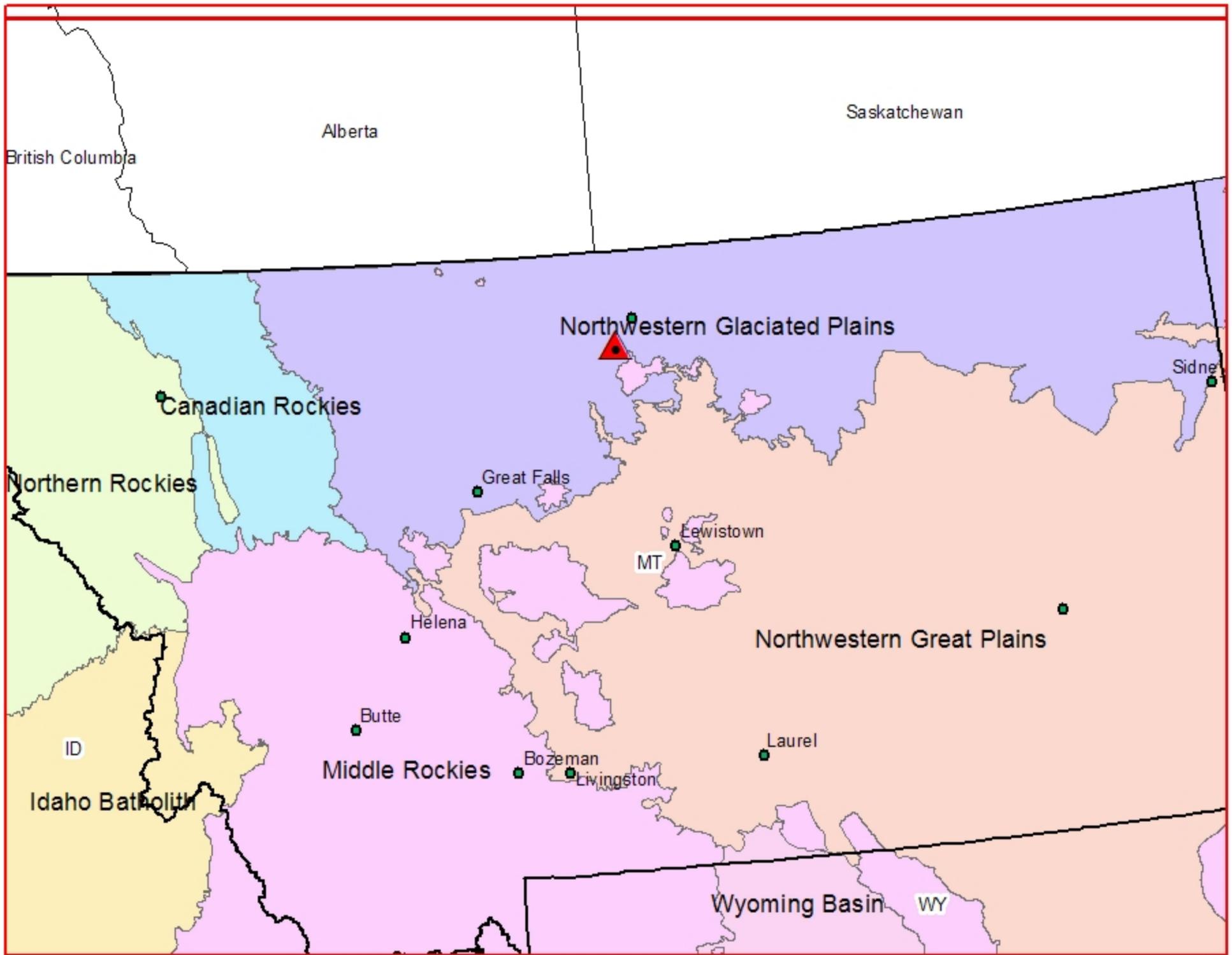
Development: The collections, then identified as *Agropyron dasystachym* (Hook.) Scribn., were increased without selection at the Plant Materials Center in Bridger, MT, and the Montana Agricultural Experiment Station. These agencies cooperatively released ‘Critana’ in 1971.

Description: Long-lived, drought-tolerant, perennial, sod-forming grass. Leafy, with narrow light-green leaves that grow to 10–12 in; lemmas and glumes pubescent.. Strongly rhizomatous and grows vigorously. Produces few seedheads; a third of the seedheads are glabrous. Critana is adapted to 10–20 in annual precipitation at 2,000–7,500 ft elevation in medium to coarse-textured soils derived from shales and clays of the northern Rocky Mountain and adjacent Great Plains region.

References:

1. Stroh JR. 1972. Description of ‘Critana’ thickspike wheatgrass *Agropyron dasystachym* (Hook.) Scribn. Bridger, MT: USDA, SCS, Plant Materials Center Manager. Technical Notes PM-M-286 P-15581. <http://plant-materials.nrcs.usda.gov/mtpmc/index.html>. Accessed 5/28/03.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
3. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.
4. USDA, SCS. 1981. Critana thickspike wheatgrass: a conservation plant for Montana and Wyoming. Bridger, MT: SCS Plant Materials Center. <http://plant-materials.nrcs.usda.gov/pubs/mtpmcsysgw0202.pdf>. Accessed 5/9/03.

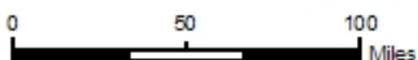
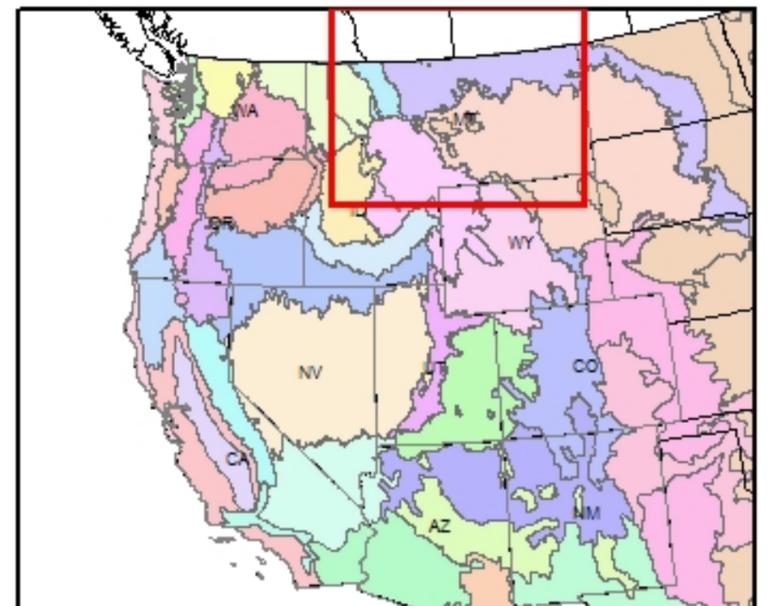
'Critana' Thickspike Wheatgrass



Shown with Level III Ecoregions

▲ Collection location (approximate)

Collected near Havre, MT.





Grass Cultivar Profile

Durar

Scientific Name: *Festuca trachyphylla* (Hack.)
Krajina

Common Name: Hard fescue

Plant Symbol: FETR3

Plant Introduction Number: PI 578732

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Festuca</i> L.—fescue
Species	<i>Festuca trachyphylla</i> (Hack.) Krajina— hard fescue

Collection Location: Union, OR.

Collection Date: Prior to 1934.

Source: Original collections of *Festuca trachyphylla* plant material were collected from an old introduced planting at the Eastern Oregon Branch Experiment Station in Union, OR. The plant was thought to originate in Turkmenistan. Not native to the U.S.

Selected by: V.B. Hawk and J.L. Schwendiman, Plant Materials Center, SCS, Pullman, WA.

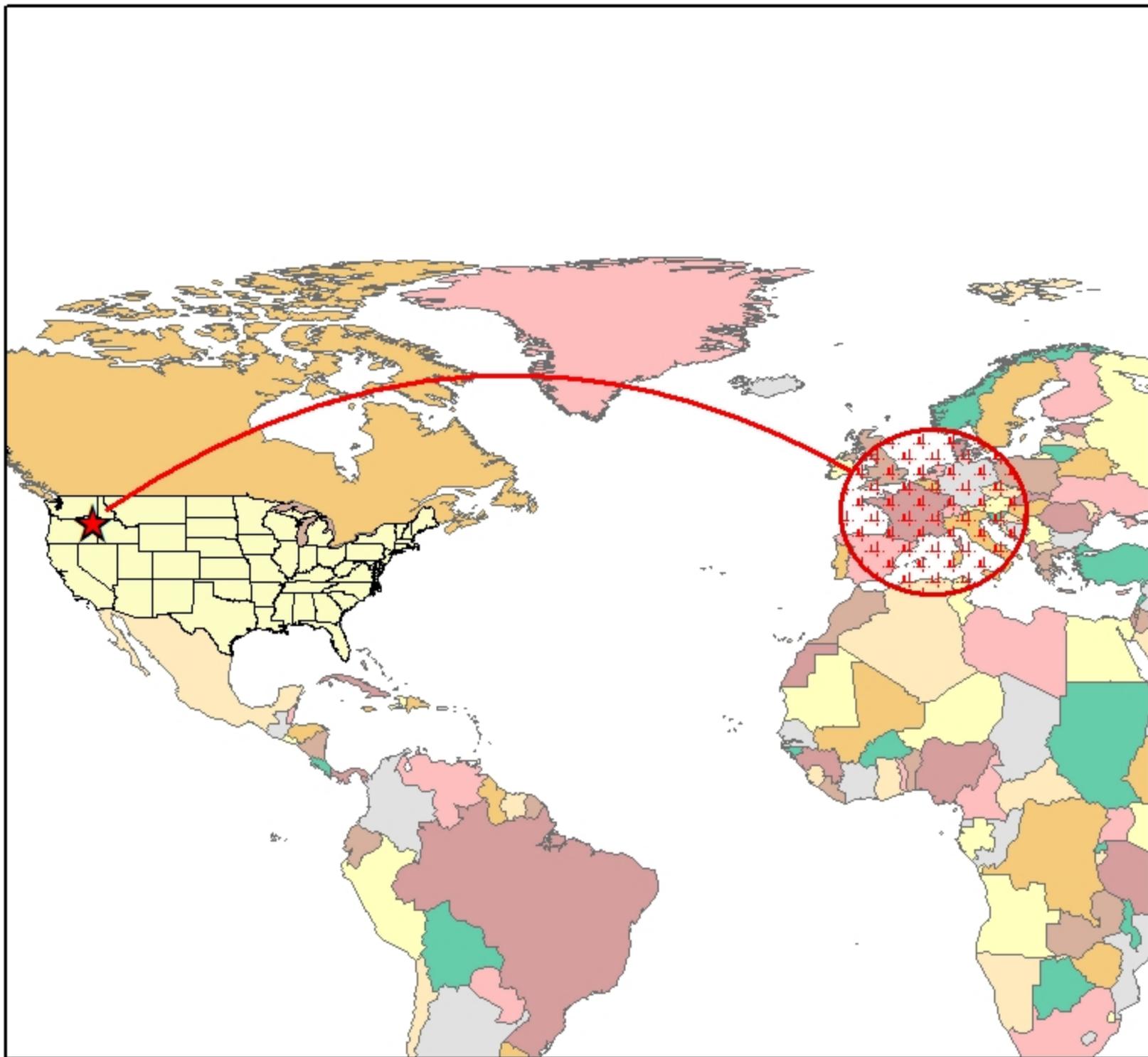
Development: ‘Durar’ was developed from an old planted stand. Mass selection was conducted for several generations. Initially released by the Washington, Idaho, and Oregon Agricultural Experiment stations, and the SCS Plant Material Center, Pullman, WA, in 1949, this cultivar was renamed ‘Durar’ in 1963.

Description: Cool-season, medium-tall, semi-erect, densely-tufted, long-lived, perennial bunchgrass. . Abundant, long, broad, coarse, lax leaves that are smoother, wider, longer, and firmer than sheep fescue. Reaches about 6 in height. Heavy root producer with mild seedling vigor and consistently high seed production. Drought- and shade-tolerant.

References:

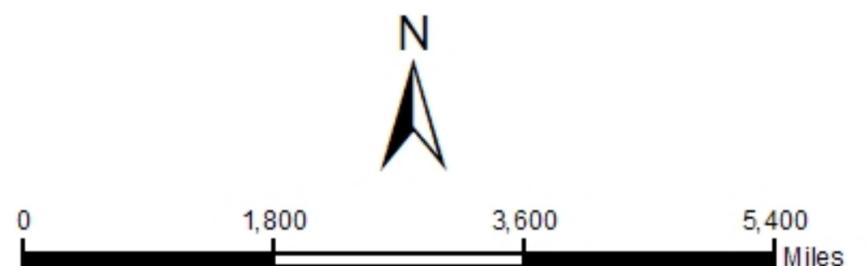
1. Alderson JS and Sharp WC. 1995. Grass varieties in the United States. Agriculture Handbook No. 170. Washington DC: USDA, SCS. http://www.forages.css.orst.edu/Topics/Species/Grasses/Grass_Varieties/. Accessed 7/20/04.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network-(GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
3. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.
4. USDA, SCS, Plant Materials Center. Hard fescue. http://plants.usda.gov/factsheet/pdf/fs_fetr3.pdf. Accessed 7/20/04.

'Durar' Hard Fescue



★ Collected from 1934 V.B. Hawk planting
on Eastern Oregon Branch Experiment
Station, Union.

Native to Europe.





Grass Cultivar Profile

Elkton

Scientific Name: *Elymus glaucus* Buckl. ssp. *jepsonii*
(Burt-Davy) Gould

Common Name: Jepson's blue wildrye

Plant Symbol: ELGLJ2

Plant Introduction Number: PI 593652

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Elymus</i> L.—wildrye
Species	<i>Elymus glaucus</i> Buckl.—blue wildrye
Subspecies	<i>Elymus glaucus</i> Buckl. ssp. <i>jepsonii</i> (Burt-Davy) Gould—Jepson's blue wildrye

Collection Location: Approximately 11.5 mi northwest of Sutherlin, OR (Sec. 24, T 24S, R 7W).

Collection Date: September 1, 1979.

Source: Original collections were from a native stand near Highway 138, approximately 11.5 mi northwest of Sutherlin, Douglas County, OR, near the city of Elkton, at 400 ft elevation.

Selected by: D.C. Darris and P. Leipzig, Plant Materials Center, NRCS, Corvallis, OR.

Development: 'Elkton' is from a wild stand; it was not intentionally bred or hybridized but was selected in comparison to 128 populations of native *Elymus glaucus* from western Oregon, western Washington, northwestern California, and several other states, and grown at the Agricultural Experiment Station in Corvallis, OR, in a 4-year, nonreplicated study. 'Elkton' was selected for its seed yield, growth vigor, weak awns, and early spring recovery and maturation. 'Elkton' was released in 1997 by the Oregon Agricultural Experiment Station and the USDA, Natural Resource Conservation Service (NRCS).

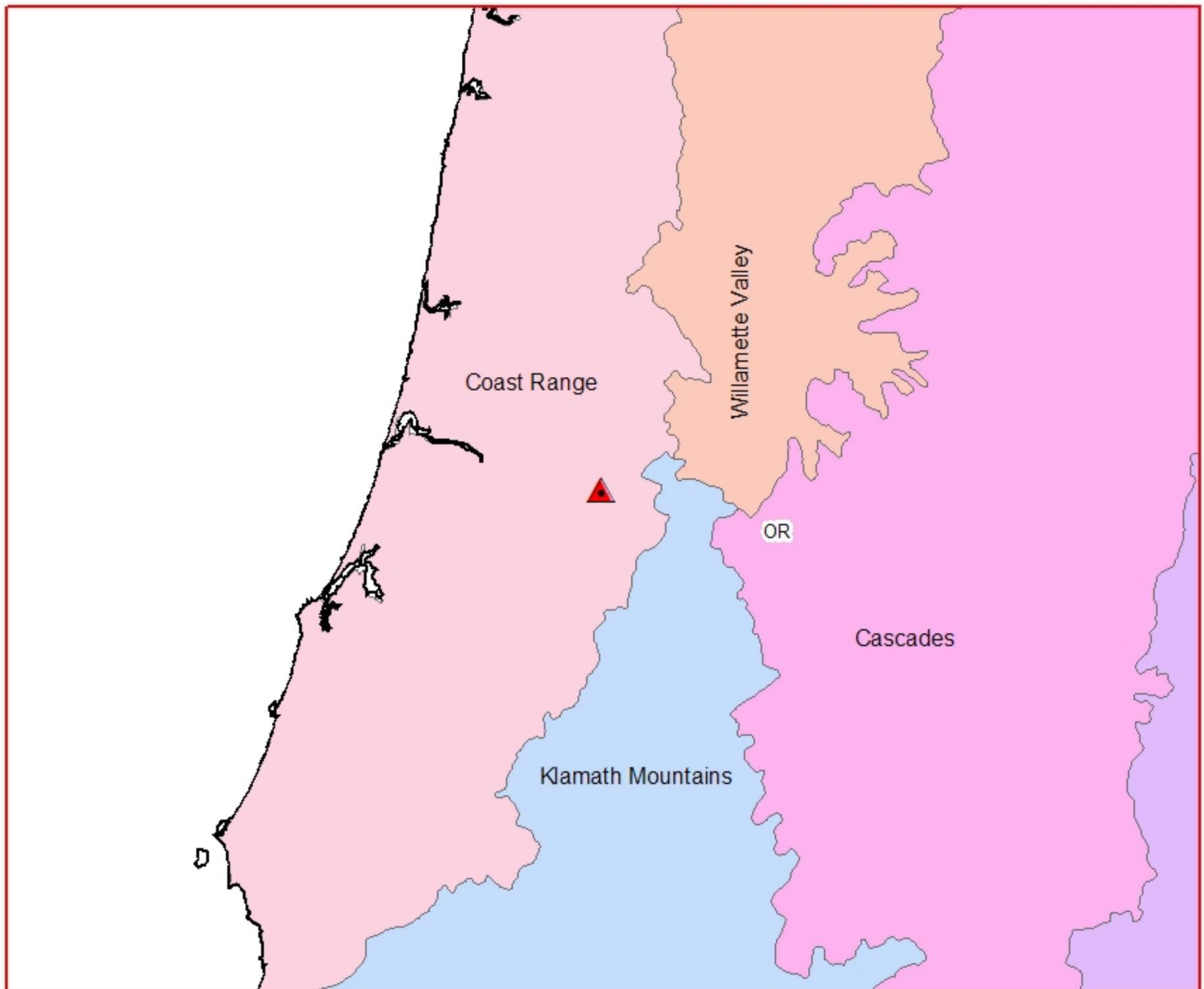
Description: Short-lived (less than the 3–8 years), cool season, loosely tufted, perennial bunchgrass. Self-fertile and primarily self-pollinated (60–95%). The variety can be most readily distinguished from other populations tested by its combination of (1) 4–14 day earlier maturity, (2) earlier spring regrowth, and (3) stand maintenance. Mean culm height 46 in., range 37–55 in. Narrow, flat, lax, 4–9-in. leaves grow from joints in the stem on mature plants, but can be basal during early growth. Bright green foliage; lacks glaucous appearance. Stems intermediate in coarseness, often bent at base. Long, narrow seedheads have bearded spikes with awns and take a purple hue when ripening begins. Lower, younger sheaths purple tinged at base, pubescent.

Mean seed weight 140,000 seeds/lb, ave. of 3 lots. Mean seed yield 514 lbs/ac, range 380–623.

References:

1. Darris DC. 2001. Arlington and Elkton blue wildrye. USDA, NRCS. <http://plant-materials.nrcs.usda.gov/pubs/orpmcbrlgj2.pdf>. Accessed 7/20/04.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network-(GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs/>. Accessed 4/22/03.
3. USDA, NRCS, and Oregon State University Agricultural Experiment Station. 1997. Notice of release of 'Elkton' blue wildrye. <http://plant-materials.nrcs.usda.gov/pubs/orpmcbrlgj2.pdf>. Accessed 7/20/04.

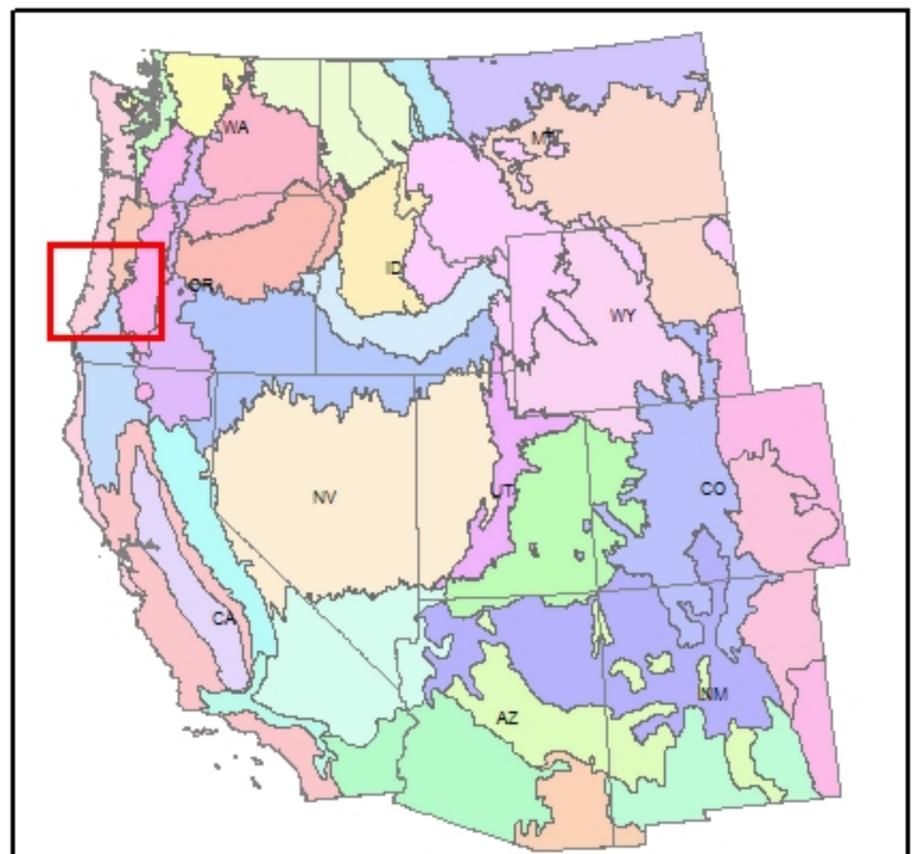
'Elkton' Jepson's Blue Wildrye



1:1,552,471 Shown with Level III Ecoregions

▲ Collection location

A native stand in Douglas County, OR,
near the city of Elkton at an elevation of 400 ft.





Grass Cultivar Profile

Goldar

Scientific Name: *Pseudoroegneria spicata* (Pursh) A.
Love ssp. *spicata*

Common Name: Bluebunch wheatgrass

Plant Symbol: PSSPS

Plant Introduction Number: PI 539873

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Pseudoroegneria</i> (Nevski) A. Love—wheatgrass
Species	<i>Pseudoroegneria spicata</i> (Pursh) A. Love—bluebunch wheatgrass
Subspecies	<i>Pseudoroegneria spicata</i> (Pursh) A. Love ssp. <i>spicata</i> —bluebunch wheatgrass

Collection Location: Malley Ridge, Umatilla National Forest, WA.

Collection Date: 1934.

Source: Original collections were from a native plant collection made on Malley Ridge, in the Umatilla National Forest in Asotin County, WA, at 1,017–1,559 ft elevation, in open ponderosa pine woodland. Identified as *Elytrigia spicata*.

Selected by: J.L. Schwendiman, Plant Materials Center, SCS, Pullman, WA.

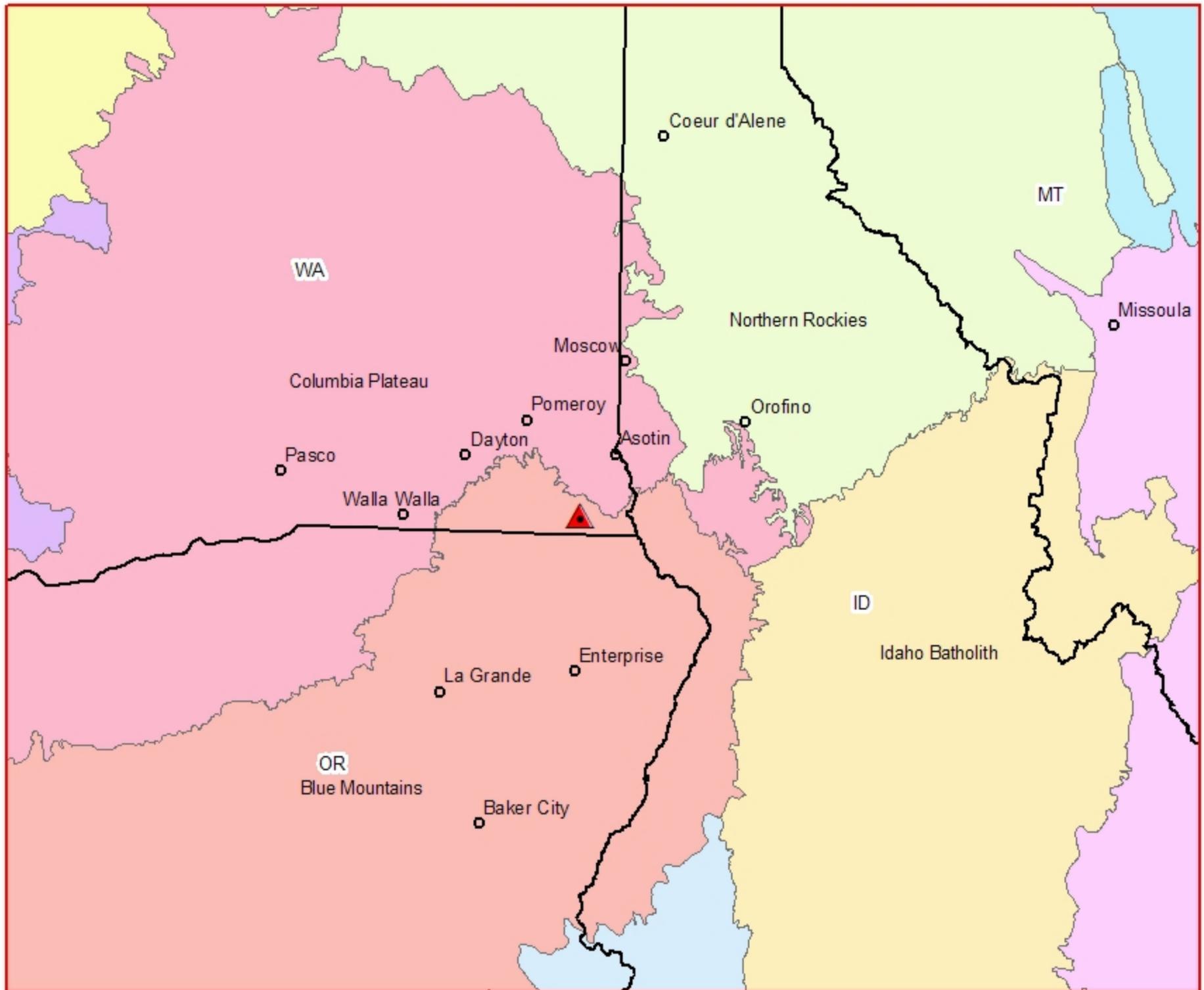
Development: ‘Goldar’ was selected from a native plant collection made in the Umatilla National Forest, for forage production, crown area, plant vigor, and stand establishment. It was developed by mass selection from spaced plantings—natural selection from rod rows of native collections and rod rows of progeny. Some crossing is assumed to have occurred during early testing. The USDA Soil Conservation Service (SCS), Utah and Idaho Agricultural Experiment Stations, and the USDA Agricultural Research Service (ARS) jointly released ‘Goldar’ in 1989.

Description: Long-lived, cool-season, densely tufted, perennial bunchgrass. Grows erect with variable height, 1½–4 ft, with short rhizomes. Narrow leaf blades flat or loosely rolled, blue-green in color, or blue on dry sites. Cold- and drought-tolerant.

References:

1. Gibbs JL, Young G, and Carlson JR. 1991. Registration of ‘Goldar’ bluebunch wheatgrass. *Crop Science* 31:1708.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs/>. Accessed 4/22/03.
3. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.

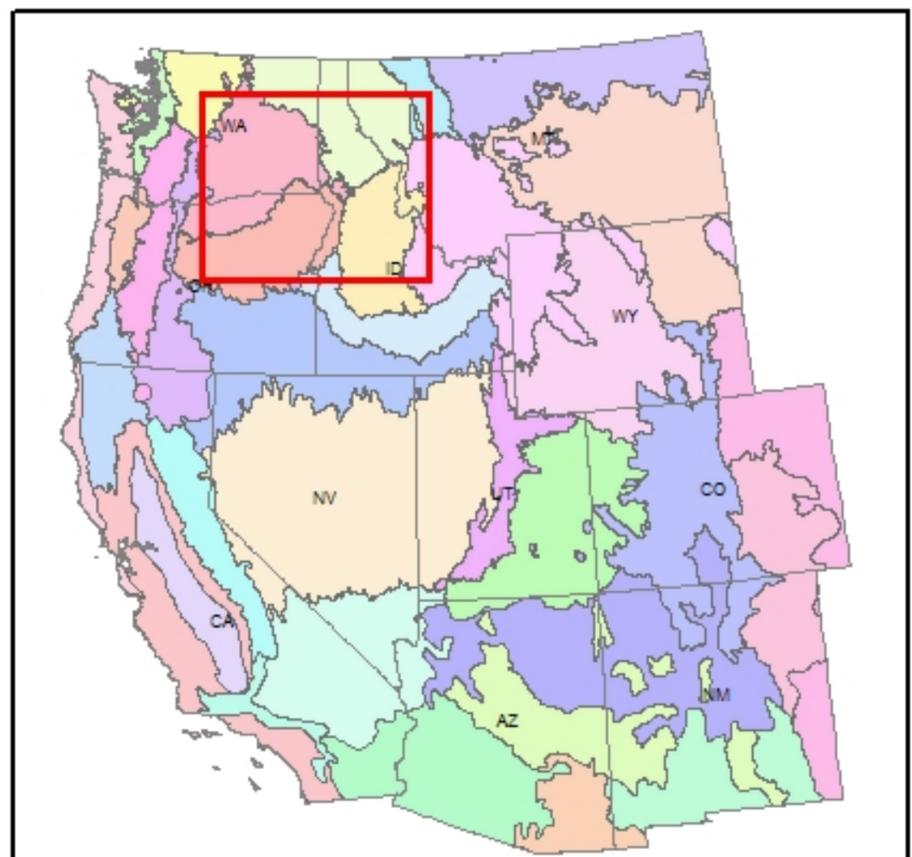
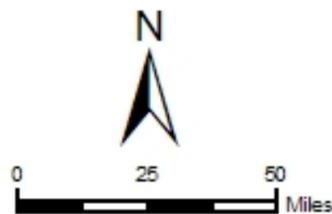
'Goldar' Bluebunch Wheatgrass



1:3,137,872 Shown with Level III Ecoregions

▲ Collection location

Selected from a native plant collection made on Mallory Ridge, Umatilla National Forest, Asotin, WA, between 310-475 m elevation, in open ponderosa pine woodland, in 1934.





Grass Cultivar Profile

Greenar

Scientific Name: *Thinopyrum intermedium* (Host)
Barkworth & D.R. Dewey

Common Name: Intermediate wheatgrass

Plant Introduction Number: PI 578691

Plant Symbol: THIN6

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Thinopyrum</i> A. Love—wheatgrass
Species	<i>Thinopyrum intermedium</i> (Host) Barkworth & D.R. Dewey— intermediate wheatgrass

Collection Location: U.S.S.R.

Collection Date: 1934 (Hein).

Source: Seeds (PI 98568) from the U.S.S.R. were the base material for the development of ‘Greenar.’

Selected by: J.L. Schwendiman, Plant Materials Center, SCS, Pullman, WA. Not native to the U.S.

Development:

Selected in 1937 from PI 98568 (identified as *Elytrigia pungens*), which was introduced from the USSR in 1934. The Agronomy Department, Washington Agricultural Experiment Station and the Soil Conservation Service (SCS) Plant Materials Center, Pullman, WA, tested it as P-2327 over more than 10 years, both alone and in combination with alfalfa. These sites included experiment stations and branch stations in dryland areas of Washington, Oregon, and Idaho, as well as farm plantings. In these tests it was compared to other varieties of intermediate wheatgrass and brome grass. Selection was for vigor, moderate sod formation, leafiness, late maturation, high production. Open pollinated selections were made from planting one generation after introduction. Initially released as P-2327 in 1945, then identified as *Agropyron intermedium* (Host.) Beauv., by Washington, Idaho, and Oregon Agricultural Experiment Stations; and the SCS Plant Materials Centers at Pullman, WA and Aberdeen, ID. A second release by the same agencies gave the cultivar the name ‘Greenar’ in 1956. Certified seed is no longer available.

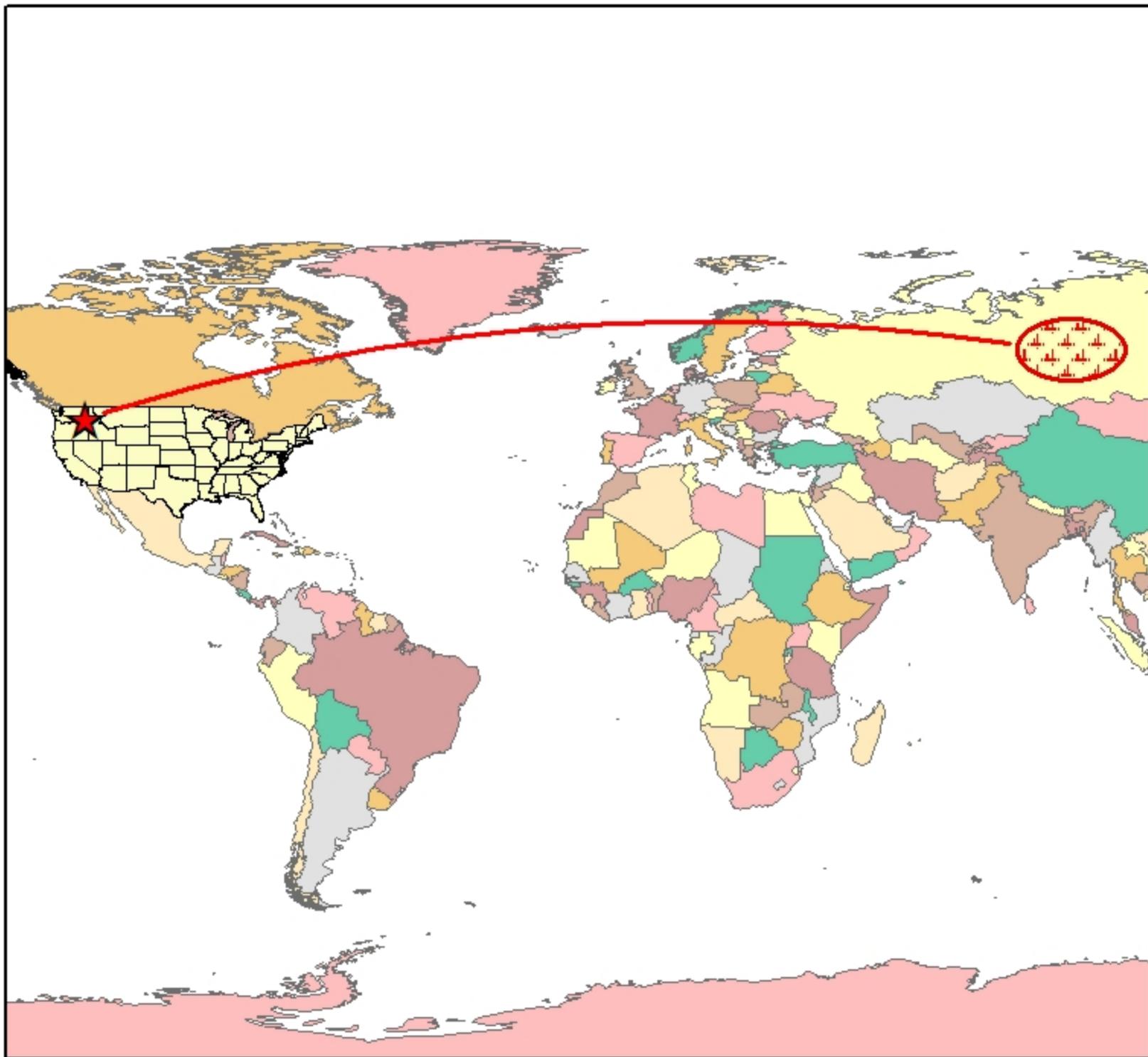
Description:

Cool-season, late-maturing, disease-resistant, vigorously growing, perennial, sod-forming grass. Leafy; dark-green, broad leaves up to $\frac{3}{8}$ in wide and 2–6 in long. Few (<5%) plants show trace of pubescence. Spring and fall recoveries are early. Grows 2½–4 ft high with abundant rhizomes and erect spikes, 4–8 in. Overlapping spikelets contain 4–8 florets. Lemmas awnless. Disease resistant, productive, aggressive.

References:

1. Hein MA. 1958. Registration of varieties and strains of grasses. *Agronomy Journal* 50(11):685–686.
2. Pratt M, Bowns J, Banner R, Rasmussen A. *Range Plants of Utah*. Utah State University Extension. <http://extension.usu.edu/coop/natres/range>. Last updated 7/20/02. Accessed 4/22/03.
3. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
4. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov> Accessed 4/22/03.

'Greenar' Intermediate Wheatgrass



Developed from selection made in 1937
from PI 98568, which was introduced by the
Westover-Enlow expedition from the former
USSR in 1932.

★ Released by the Plant Materials Center,
Pullman, WA.





Grass Cultivar Profile

Joseph

Scientific Name: *Festuca idahoensis* ELMER

Common Name: Idaho Fescue

Plant Symbol: FEID

Plant Introduction Number: PI 601054

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Festuca</i> L.—fescue P.
Species	<i>Festuca idahoensis</i> ELMER—Idaho fescue P.

Collection Location: British Columbia, California, Idaho, Montana, Oregon, Saskatchewan, Washington, and Wyoming.

Collection Date: Unspecified.

Source: Original collections from 89 ecotypes were the basis of a breeding program the Agricultural Experiment Station, Idaho established in 1950.

Selected by: University of Idaho Agricultural Experiment Station.

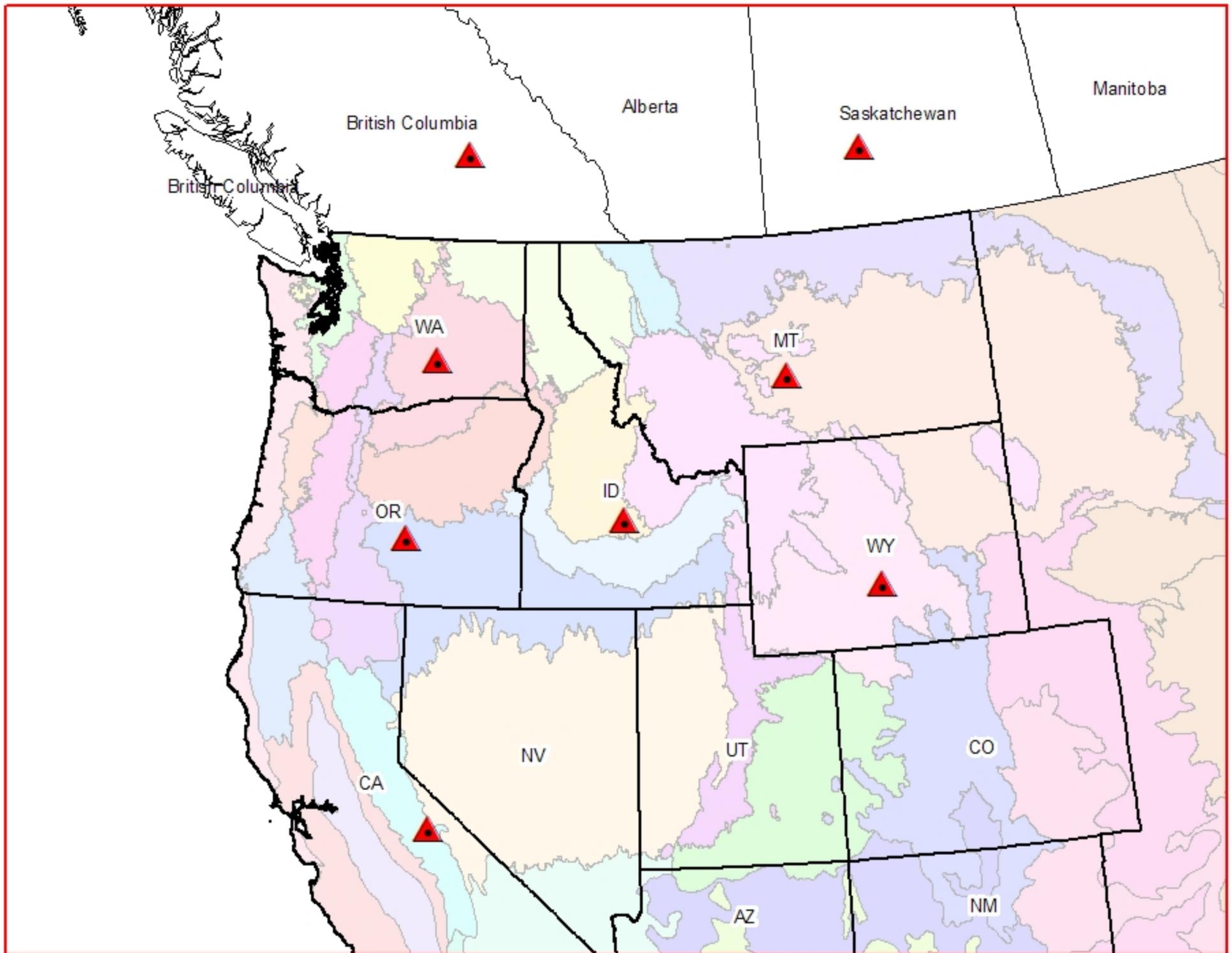
Development: Individual collections from 89 ecotypes in western North America were included in a phenotypic recurrent selection program to select progeny with increased seed size, floret fertility, and seed germination rates. ‘Joseph’ originated from the same original collection used to develop Nezpurs. The initial breeding nursery consisted of 182 progeny rows of 20 spaced plants each selected from the source nursery. About 200 plants were selected for inter-pollination the following year. After 3 years of recurrent selection, 20 clones from 100 different progeny were selected for intercrossing. This group of clones, designated as Idaho Syn ‘A’, was planted in 3 replications, in isolation, and allowed to cross. This synthetic seed was released as ‘Joseph’ by the Idaho Agricultural Experiment Station in 1983.

Description: Cool-season, perennial, bunch fescue. Uniform, robust plants. Densely tufted, olive-green leaves grow erect. Hollow, light tan culms with open, scabrous sheaths reach 28–32 in high. Open panicles 4–8 in long. Spikeletes have 5–7 florets and yellowish to purple anthers. Drought-tolerant.

References:

1. Ensign RD, Hickey VG, and Bakken TJ. 1984. Joseph and Nezpurs Idaho fescue: forage grasses for the intermountain-Northwest. Current inf. series No. 736. Moscow, ID: University of Idaho, Cooperative Extension Service, Agricultural Experiment Station. 4 p.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/cgi-bin/npgs/html/achtml.pl?1158997>. Accessed 4/22/03.
3. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.

'Joseph' Idaho Fescue



Shown with Level III Ecoregions

- ▲ Collection area
- Collected from unspecified localities in BC, WA, OR, CA, ID, WY, MT, and Sask.





Grass Cultivar Profile

Latar

Scientific Name: *Dactylis glomerata* L.

Common Name: Orchardgrass

Plant Symbol: DAGL

Plant Introduction Number: PI 578561

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Dactylis</i> L.—orchardgrass
Species	<i>Dactylis glomerata</i> L.—orchardgrass

Collection Location: Leningrad, U.S.S.R.

Collection Date: 1934.

Source: Original collections were obtained from the Institute of Plant Industry, Leningrad, U.S.S.R., in 1934, under the number PI 111536. Not native to the U.S.

Selected by: J.L. Schwendiman, R.J. Olson, and A.G. Law, Plant Materials Center, SCS, Pullman, WA.

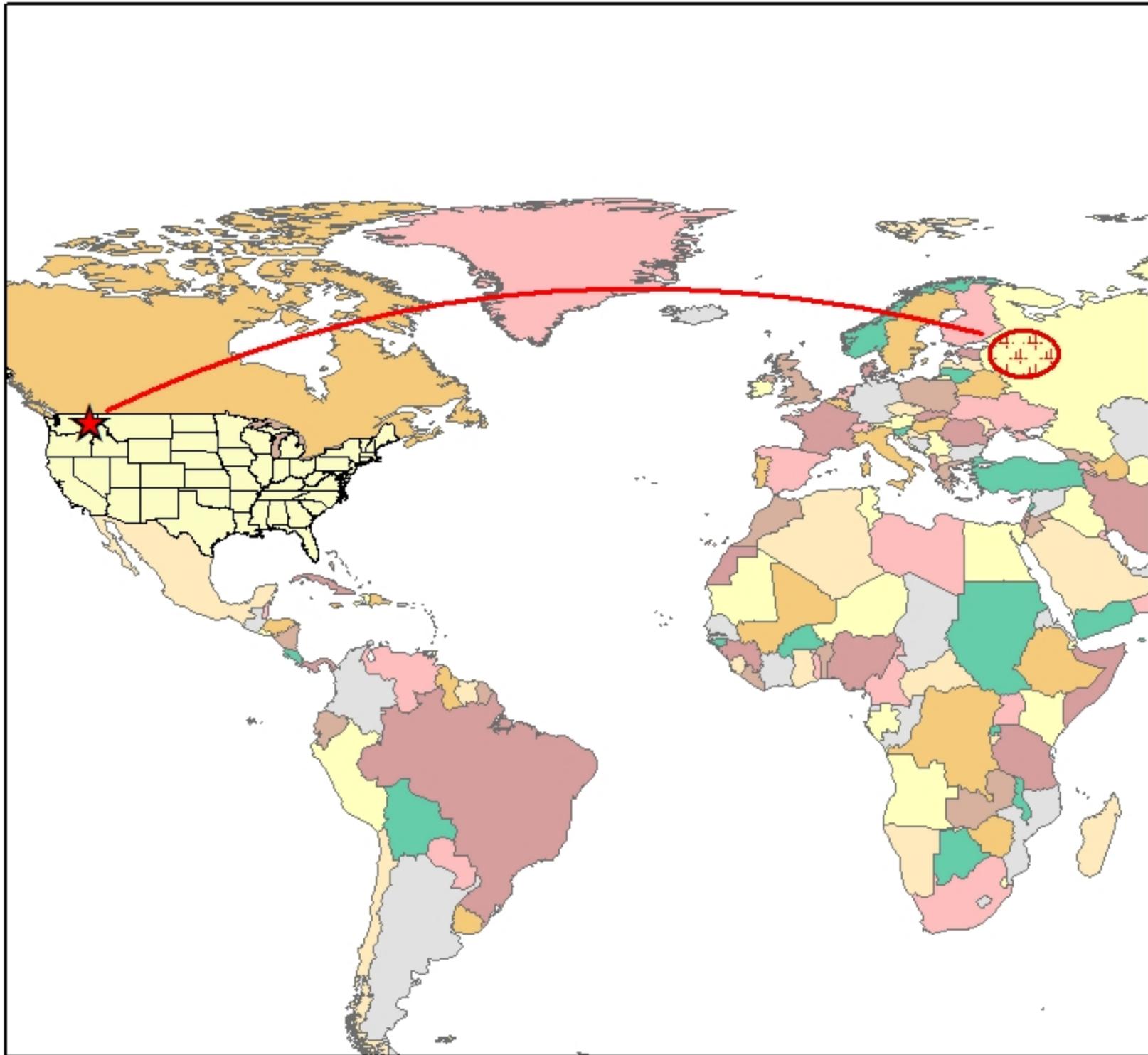
Development: Grown for three generations at the SCS Plant Materials Center, Pullman, WA. Mass selection from spaced plantings in the fourth generation was made jointly by the Agronomy Department of Washington Agricultural Experiment Station and the Agricultural Research Service (ARS). The originating agencies jointly registered 'Latar' in 1957.

Description: Long-lived, cool-season, late-maturing, perennial bunchgrass. Abundant, long, light-green leaves about ½ in wide; folded when immature, leaves become flat as the plant matures. Panicles 2–8 in long with spikelets grouped together in dense, one-sided clusters at the end of the panicle branches. Spikelets have 2–5 florets. Vigorous and high in vegetative production, with late maturity (10–14 days later than commercial varieties), and rapid recovery after harvest. Low in lignin; disease resistant, particularly to leaf spot.

References:

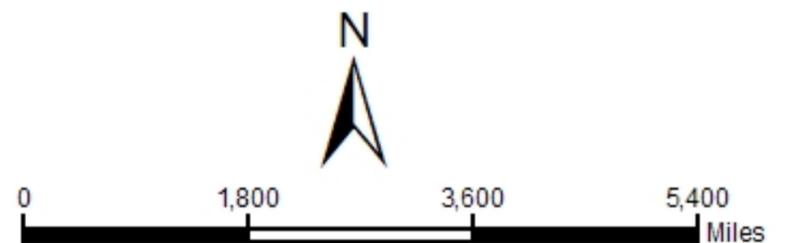
1. Hein MA. 1958. Registration of varieties and strains of grasses. *Agronomy Journal* 50(11):685–686.
2. Pratt M, Bowns J, Banner R, Rasmussen A. Range. Utah State University Extension. <http://extension.usu.edu/coop/natres/range>. Last updated 7/20/02. Accessed 4/22/03.
3. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. http://www.ars-grin.gov/cgi-bin/npgs/html/acc_search.pl?accid=elkton. Accessed 4/22/03.
4. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.

'Latar' Orchardgrass



Original introduction from Institute of Plant Industry,
Leningrad, Russia, as PI 111536, by Westover-Enlow
expedition in 1934.

★ Released by the Plant Materials Center,
Pullman, WA.





Grass Cultivar Profile

Luna

Scientific Name: *Thinopyrum intermedium* (Host)
Barkworth & D.R. Dewey

Common Name: Pubescent wheatgrass

Plant Introduction Number: PI 578700

Plant Symbol: THIN6

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Thinopyrum</i> —wheatgrass
Species	<i>Thinopyrum intermedium</i> (Host) Barkworth & D.R. Dewey—pubescent wheatgrass

Collection Location Ashkhabad, Turkmenistan.

Collection Date: 1934.

Source: Original collections from the former U.S.S.R., introduced as *Agropyron popovii* Dobrov, PI 106831. Identified by J.R. Swallen as *A. trichophorum* (Link) Richter, now *Elytrigia intermedida* or *T. intermedium*. Not native to the U.S.

Selected by: J.A. Downs, G.C. Niner, and J.E. Anderson, Plant Materials Center, SCS, Los Lunas, NM.

Development: ‘Luna’ was developed from collection introduced from Turkmenistan. The original accession was space planted and rogued heavily through two generations for *E. intermedia* type, at the former Soil Conservation Service (SCS) Nursery, Albuquerque, and the SCS Plant Materials Center, Los Lunas, NM. Selected for seedling vigor, fast establishment, and good forage production. It was released in 1963, cooperatively by the New Mexico Agricultural Extension Service and the SCS Plant Materials Center, Los Lunas, NM.

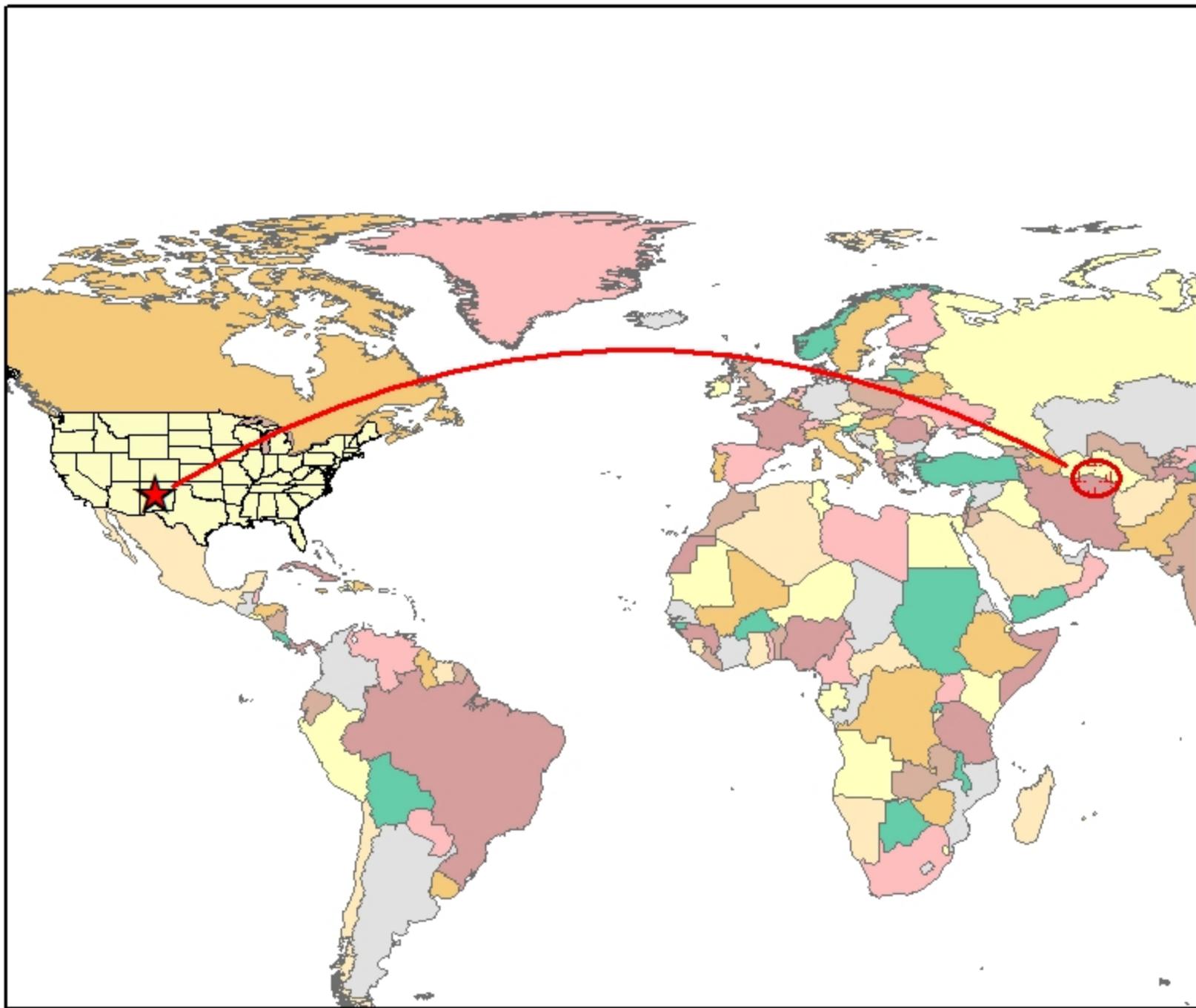
Description: Long-lived, cool-season, perennial, sod-forming grass. Leaves wide, lax, and dark green. Erect spikes, 4–8 in long, have slightly overlapping spikelets with 4–8 florets. Lemmas awnless. Reaches nearly 4 ft high, with uniformly blue-green appearance. Similar to intermediate wheatgrass in appearance except having varying degrees of pubescence throughout the plant. Some seedheads appear glabrous but all basal leaf blades hairy, particularly on margins. Less pubescent than other strains tested. Requires climate where an effective portion of annual precipitation occurs as accumulated snowfall. Grows at 7,000–8,500 ft, with annual rainfall of 17–20 in, or at lower elevations and with less rainfall.

Seed yield 334 lbs/ac, average over 4 years.

References:

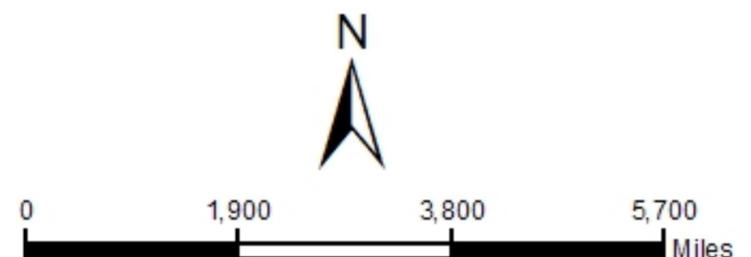
1. Niner, G.C. 1967. Registration of Luna pubescent wheatgrass. *Crop Science* 7(6):683.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs> Accessed 4/22/03.
3. USDA, SCS, Plant Materials Center of the Middle Rio Grande Substation. Release of “Luna” pubescent wheatgrass (*Agropyron trichophorum*). <http://plant-materials.nrcs.usda.gov/nmpmc/releases.html>. Accessed 8/5/04.

'Luna' Pubescent Wheatgrass



Collected by Westover-Enlow expedition
to the former USSR and Turkey in 1934.
Introduced as *Agropyron popovii* Drobov, PI 106831.
Identified by J.R. Swallen as *A. trichophorum* (Link) Richter,
now *E. intermedia* (Host) Nevski.

★ Released by the Plant Materials Center,
Los Lunas, New Mexico.





Grass Cultivar Profile

Magnar

Scientific Name: *Leymus cinereus* (Scribn. & Merr.)

A. Love

Common Name: Basin wildrye

Plant Introduction Number: PI 469229

Plant Symbol: LECI4

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Leymus</i> Hochst.—wildrye
Species	<i>Leymus cinereus</i> (Scribn. & Merr.) A. Love—basin wildrye

Collection Location: Saskatchewan, Canada.

Collection Date: 1939.

Source: Original collections were from the University of Saskatchewan, Saskatoon, Saskatchewan, Canada. It was once a very important winter forage plant on the western rangelands, especially in Nevada, but overgrazing has greatly reduced or eliminated it.

Selected by: J.L. Schwendiman, Plant Materials Center, SCS [NRCS], Pullman, WA.

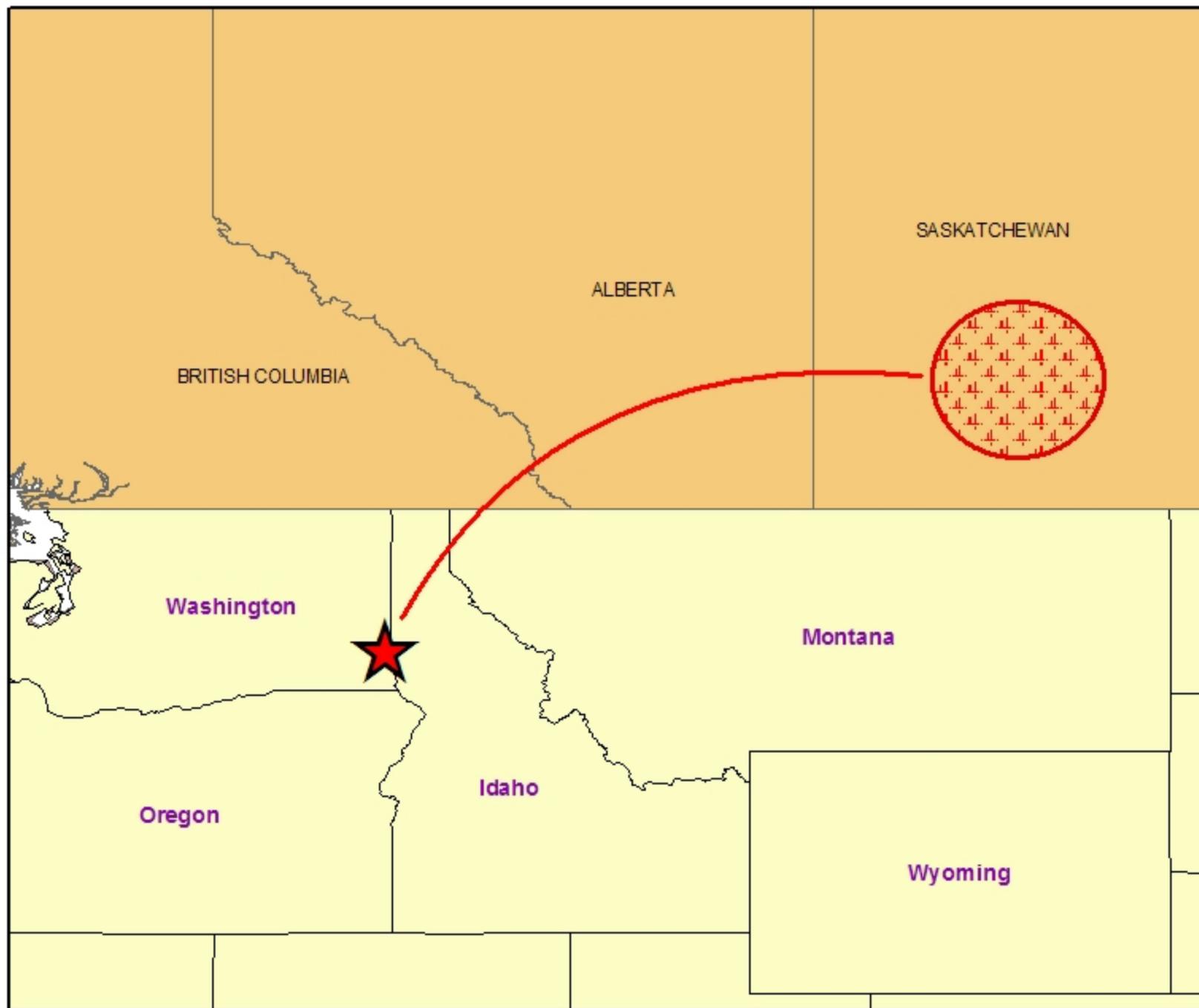
Development: ‘Magnar’ was developed from *Leymus cinereus* plant material collected at the University of Saskatchewan by the Soil Conservation Service (SCS) Plant Materials Center in Pullman, WA. It was developed by the Plant Material Center in Aberdeen, ID, selected over several generations for vigorous plant types, which had superior production of viable seed. The SCS Plant Materials Center in Aberdeen, ID, released ‘Magnar’ in 1979.

Description: Hardy, robust, long-lived, cool-season, perennial bunchgrass. Culms numerous, erect, stiff, and stout, ranging from about 3–8 ft tall, depending on the site. Culms coarse and very glaucous. Short, thick rhizomes may be present in some plants. Blades generally blue-green in color, firm, flat, cauline, harsh, up to 1 in wide, and up to 30 in long. Large, erect seed heads (spikes) 4–12 in long. Seeds grow rapidly. Tolerant to fire and salinity.

References:

1. Alderson JS and Sharp WC. 1995. Grass varieties in the United States. Agriculture Handbook No. 170. Washington DC: USDA, SCS. http://www.forages.css.orst.edu/Topics/Species/Grasses/Grass_Varieties/. Accessed 7/20/04.
2. Ogle DG. 2000. Basin wildrye. Plant Guide. Boise, ID: USDA, NRCS, Idaho State Office. http://plants.usda.gov/plantguide/pdf/pg_lecti4.pdf. Accessed 7/20/04.
3. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network-(GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
4. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.
5. USDA, SCS; and University of Idaho, Agricultural Experiment Station. 1979. Notice of release of ‘Magnar’ basin wildrye. <http://plant-materials.nrcs.usda.gov/pubs/1dpmcn/eci4.pdf>. Accessed 8/13/04.

'Magnar' Basin Wildrye



Obtained from the University of Saskatchewan,
Saskatoon, Saskatchewan, Canada, in 1938.

★ Selected by the Plant Materials Center, Pullman, WA;
Released by the Plant Materials Center, Aberdeen, ID.





Grass Cultivar Profile

Manchar

Scientific Name: *Bromus inermis* Leyss

Common Name: Smooth brome

Plant Symbol: BRIN2

Plant Introduction Number: PI 578551

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Bromus</i> L.—brome
Species	<i>Bromus inermis</i> Leyss—smooth brome

Collection Location: Manchuria, China.

Collection Date: 1935.

Source: Original plant material for the ‘Manchar’ cultivar was from the Kungchuling Experiment Station of South Manchurian Railway, Manchuria, China, under the introduction number P.I. 109812. Not native to the U.S.

Selected by: J.L. Schwendiman, A.G. Law, A.L. Hafenrichter, and D.C. Tingey, Plant Materials Center, SCS [NRCS], Pullman, WA.

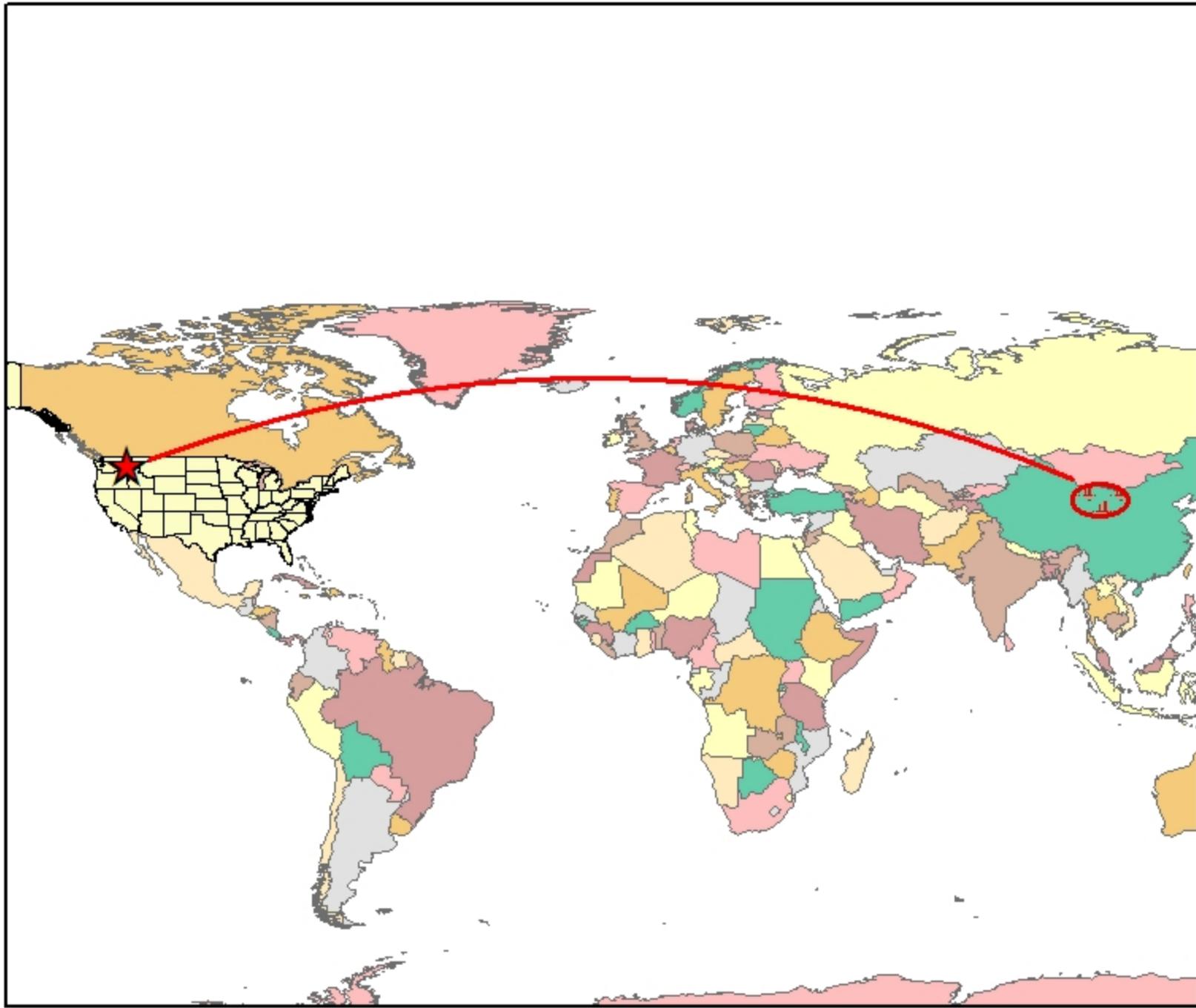
Development: Seed from introduction PI 109812 was grown for a number of generations at the Soil Conservation Service (SCS) Plant Materials Center in Aberdeen, ID. Mass selection was based on disease resistance, fast recovery, and high long-term yields. Manchar was under test for 7 years at Moscow and Aberdeen, Idaho. It was developed for use in alfalfa-grass mixtures for pasture or hay with irrigation or rainfall over 14 in. The Department of Agronomy of the Idaho Agricultural Experiment Station and the SCS Plant Materials Center, Aberdeen, ID, cooperatively released P-177 in 1943; it was named ‘Manchar’ in 1946.

Description: Long-lived, cool-season, leafy, perennial, sod-forming brome grass. Narrow, flat leaves are glabrous or occasionally pubescent and grow 8–15 in long. Leaves grow high on the stem. Seedheads have compact to somewhat open panicles, 4–8 in long, with short, slender spikelets that turn brownish at maturity and have 5–10 florets. Dark purple-cast seeds. Disease resistant. Strong seedling vigor.

References:

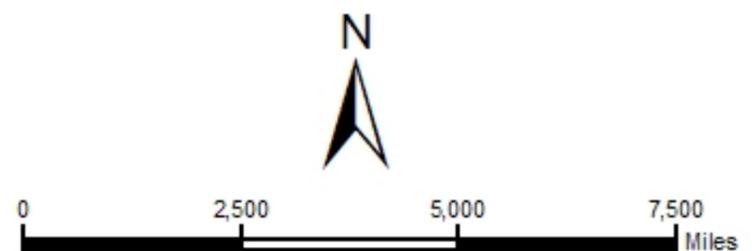
1. Hein MA. 1960. Registration of varieties and strains of brome grass (*Bromus* spp.) IV. *Agronomy Journal* 52(7):406.
2. Pratt M, Bowns J, Banner R, Rasmussen A. Range Plants of Utah. Utah State University Extension. <http://extension.usu.edu/coop/natres/range>. Last updated 7/20/02. Accessed 4/22/03.
3. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs/> Accessed 4/22/03.
4. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.

'Manchar' Smooth Brome



Original introduction in 1935 from Kungchuling Experiment Station of South Manchurian Railway, Manchuria, China, as PI 109812.

★ Released by the Plant Materials Center, Pullman, WA.





Grass Cultivar Profile

Nezpurs

Scientific Name: *Festuca idahoensis* ELMER

Common Name: Idaho fescue

Plant Symbol: FEID

Plant Introduction Number: PI 601053

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Festuca</i> L.—fescue
Species	<i>Festuca idahoensis</i> ELMER—Idaho fescue

Collection Location: British Columbia, California, Idaho, Montana, Oregon, Saskatchewan, Washington, and Wyoming.

Collection Date: Unspecified.

Source: Original collections from 89 ecotypes in were the basis of a breeding program the Idaho Agricultural Experiment Station established in 1950.

Selected by: University of Idaho Agricultural Experiment Station.

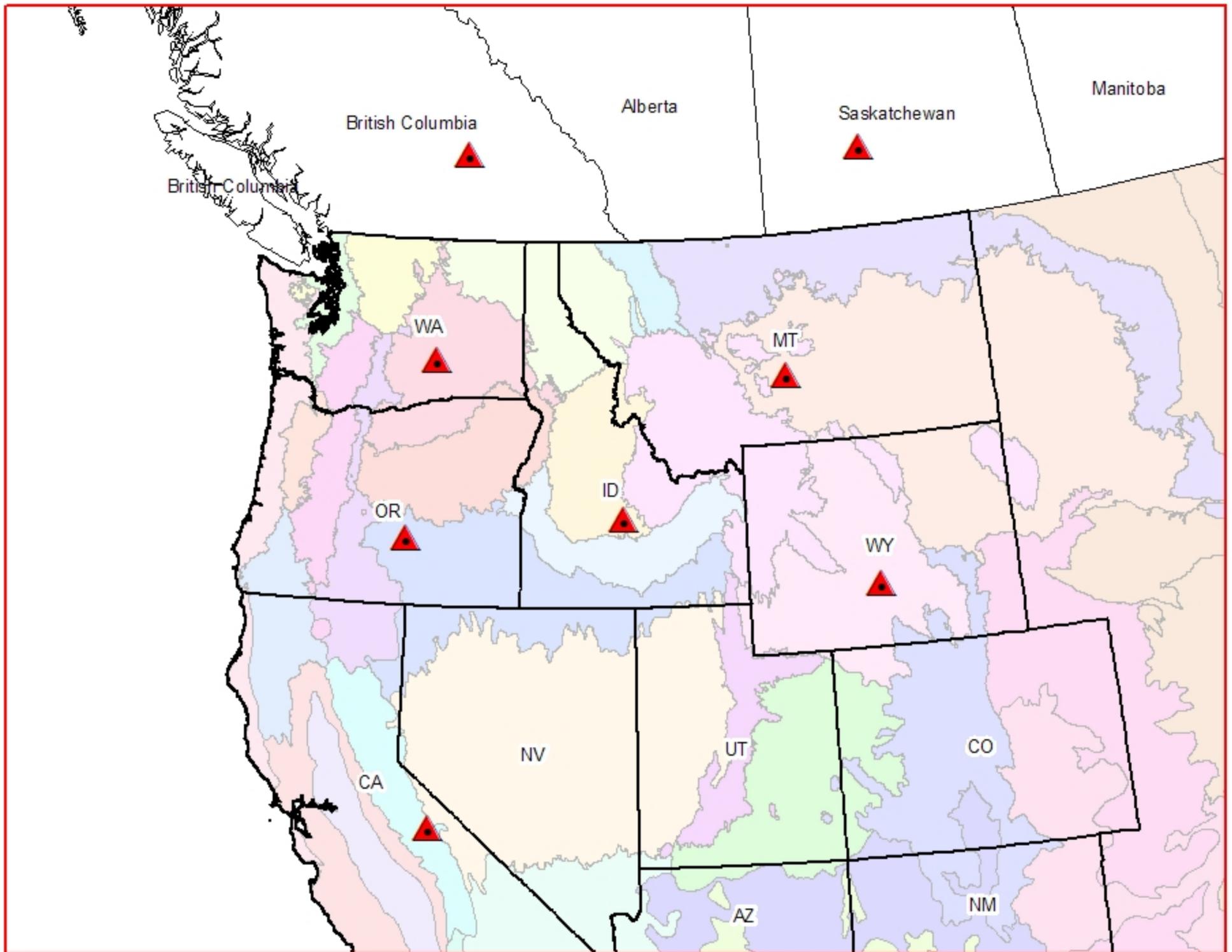
Development: Individual collections from 89 ecotypes in western North America were scored for seed size, floret fertility, and seed germination rates. Nezpurs originated from the same original collection used to develop Joseph. The initial breeding nursery consisted of 182 progeny rows of 20 spaced plants each selected from the source nursery. About 200 plants were selected for inter-pollination the following year. After 3 years of recurrent selection, 100 different progeny were selected for intercrossing. From these 100 clones, 90 were selected, designated as Idaho Syn. 'C', and planted in three replications to inter-pollinate. Synthetic seed was produced and released as Nezpurs by Idaho Agricultural Experiment Station in 1983.

Description: Cool-season, perennial, bunch fescue. Densely tufted olive-dark green leaves grow erect. Hollow light tan culms with open, scabrous sheaths reach 21–27 in tall. Open panicles 4–8 in long. Spikelets have 5–7 florets and yellowish to purple anthers. Drought-tolerant.

References:

1. Ensign RD, Hickey VG, and Bakken TJ. 1984. Joseph and Nezpurs Idaho fescue: forage grasses for the intermountain-northwest. Current info. series No. 736. Moscow, ID: University of Idaho, Cooperative Extension Service, Agricultural Experiment Station. 4 p.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network-(GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. http://www.ars-grin.gov/cgi-bin/npgs/html/acc_search.pl?accid=nezpurs&inactive=Yes. Accessed 4/22/03.
3. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.

'Nezpurs' Idaho Fescue



Shown with Level III Ecoregions

- ▲ Collection area
- Collected from unspecified localities in BC, WA, OR, CA, ID, WY, MT, and Sask.





Grass Cultivar Profile

Oahe

Scientific Name: *Thinopyrum intermedium* (Host)
Barkworth & D.R.

Common Name: Intermediate wheatgrass

Plant Introduction Number: PI 574517

Plant Symbol: THIN6

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Thinopyrum</i> A. Love—wheatgrass
Species	<i>Thinopyrum intermedium</i> (Host) Barkworth & D.R. Dewey— intermediate wheatgrass

Collection Location: U.S.S.R.

Collection Date: Before 1932.

Source: Seeds from plants originating in Russia were obtained in 1937 from Fort Collins, CO. Not native to the U.S.

Selected by: J.G. Ross, South Dakota AES, Brookings, SD.

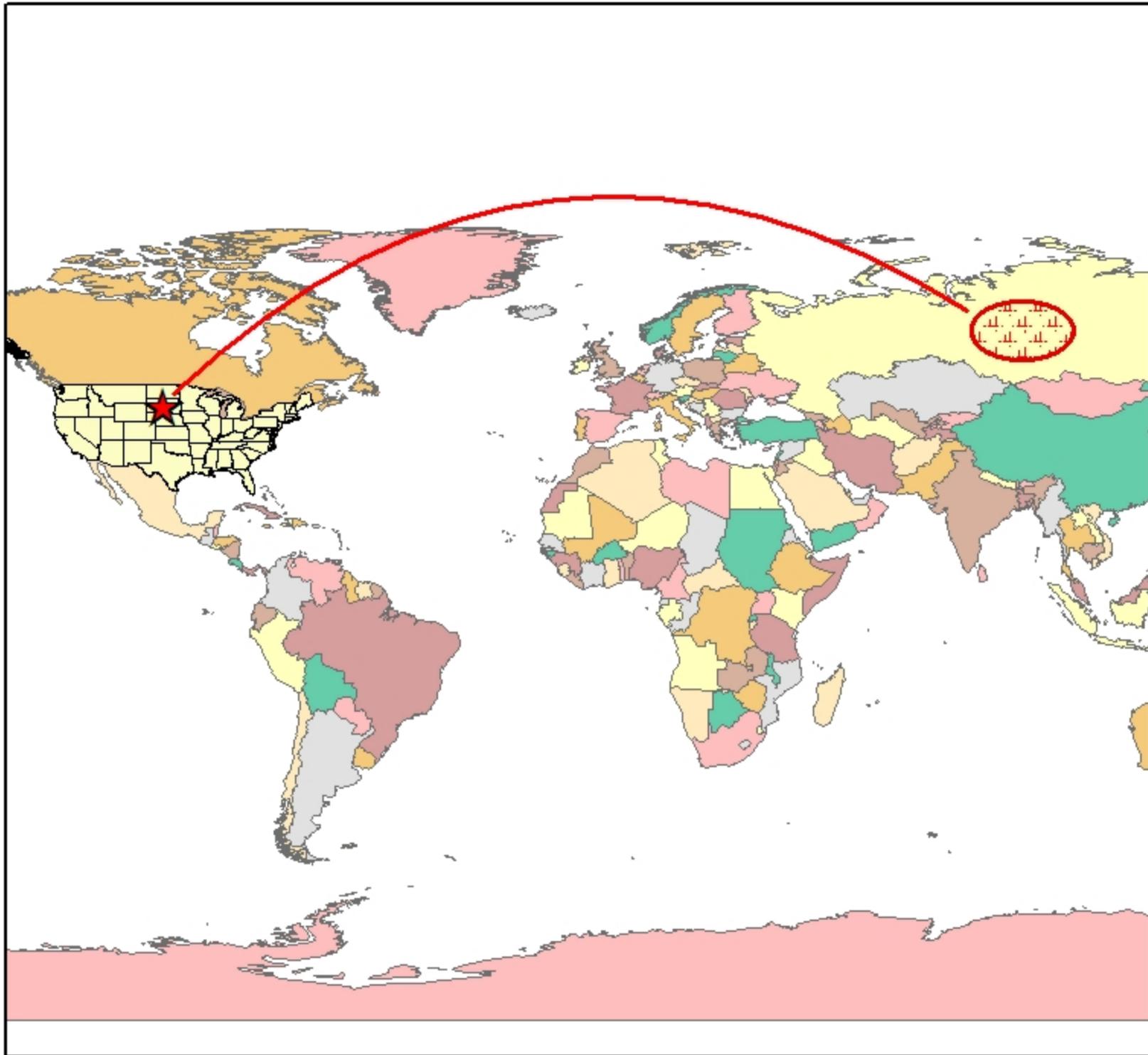
Development: Seeds from plants originating in Russia were obtained from Fort Collins, CO, under accession number PI 98568, by the South Dakota Agricultural Experiment Station. The introduction was identified as derivative of a cross between *Agropyron intermedium* and *A. trichophorum*, both now *Elytrigia intermedia* or *Thinopyrum intermedium*. ‘Oahe’ is 4-clone synthetic cultivar, developed from two cycles of selection for seed set, vigor, yield, rust resistance, uniform bluish-green color, drought tolerance, and rhizomatous traits. Released as ‘Ree’ in 1945; released as ‘Oahe’ in 1961 by South Dakota AES.

Description: Cool-season, perennial, sod-forming grass. Abundant, glabrous, flat leaves grow up to $\frac{3}{8}$ in wide and 2–6 in long. Erect spikes, 4–8 in long, have slightly overlapping spikelets with 4–8 florets. Lemmas awnless. Reaches nearly 4 ft high, with uniformly blue-green appearance. Grows vigorously with abundant rhizomes. Produces high yields of large seed. Drought-tolerant, winter hardy.

References:

1. Ross JG. 1963. Registration of Oahe intermediate wheatgrass. *Crop Science* 3(4):373.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs/> Accessed 4/22/03.
3. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.

'Oahe' Intermediate Wheatgrass



Selected from Russian introduction PI 98568 obtained from Fort Collins, CO, in 1937 and released by South Dakota AES in 1945 as Ree. Introduction identified as derivative of cross between *Agropyron intermedium* and *A. trichophorum*.

★ Released from South Dakota





Grass Cultivar Profile

Primar

Scientific Name: *Elymus trachycaulus* (Link) Gould
ex Shinners ssp. *trachycaulus*

Common Name: Slender wheatgrass

Plant Symbol: ELTRT

Plant Introduction Number: PI 578679

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Elymus</i> L.—wildrye
Species	<i>Elymus trachycaulus</i> (Link) Gould ex Shinners—slender wheatgrass
Subspecies	<i>Elymus trachycaulus</i> (Link) Gould ex Shinners ssp. <i>trachycaulus</i> —slender wheatgrass

Collection Location: Near Beebe, MT.

Collection Date: 1933.

Source: Original collections from a native plant collection made near Beebe, MT.

Selected by: A.L. Hafenrichter, J.L. Schwendiman, and A.G. Law, SCS Plant Materials Center, Pullman, WA.

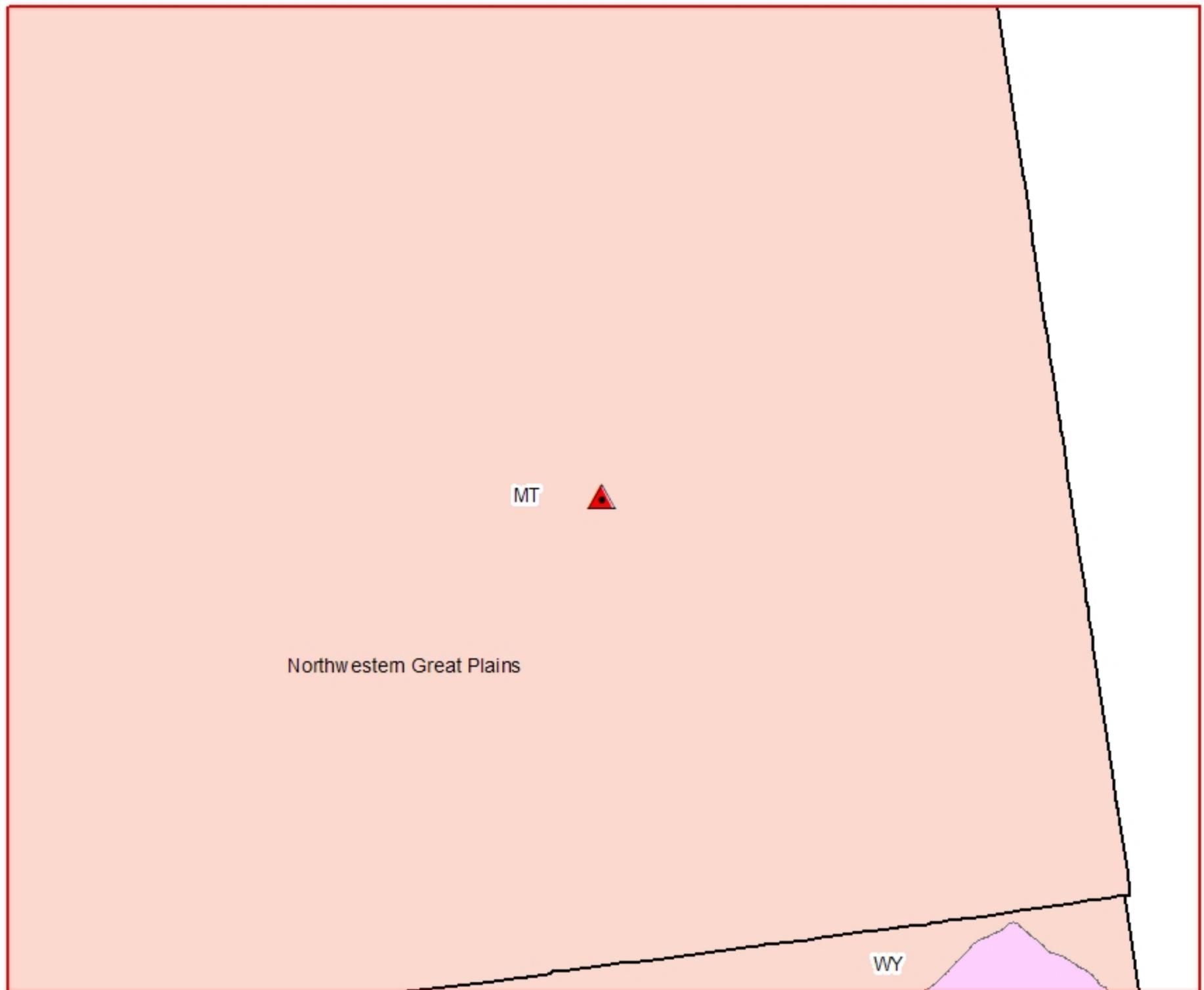
Development: ‘Primar’ was developed from a single collection of a wild stand of *Elymus trachycaulus* ssp. *trachycaulus*, collected by the USDA Forest Service. It was planted in 1936 as selection P-2535 in comparison with 23 other strains. Later it was compared with 104 selections and tested over a period of 10 years at several locations in the Pacific Northwest. ‘Primar’ was released in 1946 cooperatively by the Washington, Idaho, and Oregon Agricultural Experiment Stations at Pullman, Moscow, and Corvallis, respectively; the SCS Plant Materials Center, Pullman, WA; and the Agricultural Research Station (ARS), Plant Science Research Division.

Description: Long-lived, vigorous, early-growing, perennial bunchgrass. Semi-erect, slender, and taller than other varieties. Inflorescence a spike, generally 4–10 in long. Leaves and stems gray-green, moderately coarse, and glaucous. High vegetation production; seed production moderately heavy. Disease-resistant (leaf rust, stem rust, stripe rust, head smut). Highly tolerant to fire and salinity.

References:

1. Alderson JS and Sharp WC. 1995. Grass varieties in the United States. Agriculture Handbook No. 170. Washington DC: USDA, SCS. http://www.forages.css.orst.edu/Topics/Species/Grasses/Grass_Varieties/. Accessed 7/20/04.
2. Block DN. *Elymus trachycaulus*. Rangeland Ecosystems and Plants. University of Saskatchewan. <http://www.usak.ca/agriculture/plantsci/classes/range/agropyrontrach.html>. Accessed 4/25/03.
3. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network-(GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
4. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.

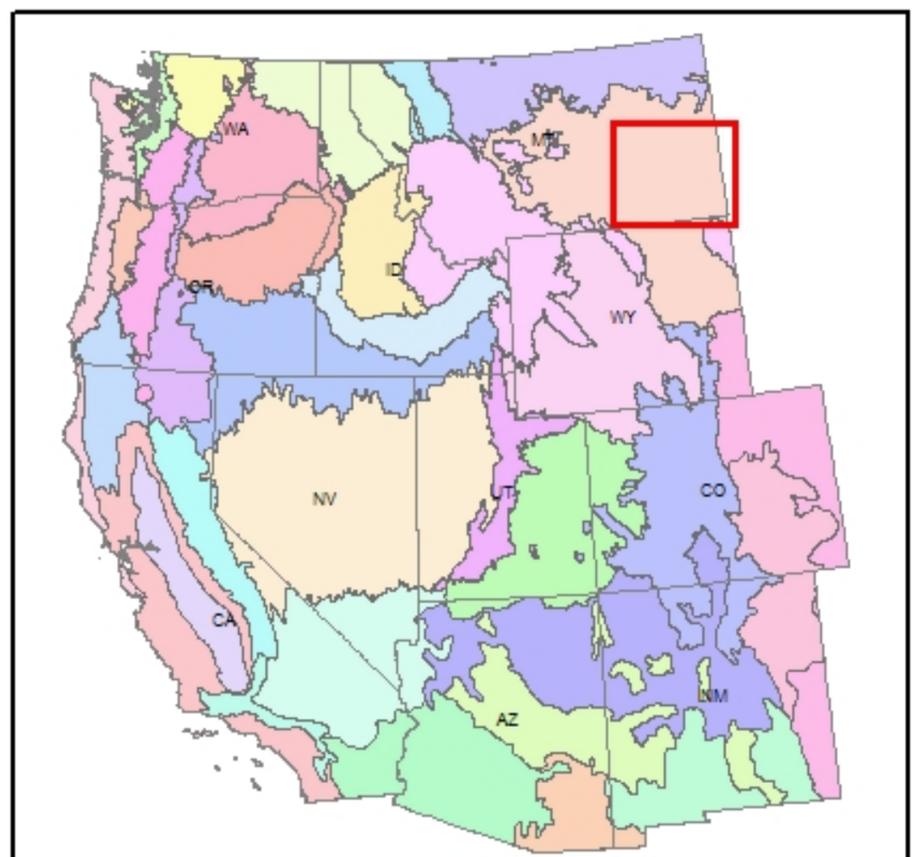
'Primar' Slender Wheatgrass



1:1,701,318 Shown with Level III Ecoregions

 Collection location

Collected near Beebe, MT, in 1933
by the USDA-FS.





Grass Cultivar Profile

Schwendimar

Scientific Name: *Elymus lanceolatus* (Scribn. & J.G. Sm.) Gould ssp. *lanceolatus*

Common Name: Thickspike wheatgrass

Plant Introduction Number: PI 632756

Plant Symbol: ELLAL

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Elymus</i> L.—wildrye P.
Species	<i>Elymus lanceolatus</i> (Scribn. & J.G. Sm.) Gould—thickspike wheatgrass
Subspecies	<i>Elymus lanceolatus</i> (Scribn. & J.G. Sm.) Gould ssp. <i>lanceolatus</i> —thickspike wheatgrass

Collection Location: East of The Dalles, OR.

Collection Date: 1934.

Source: Original seed collections were from a native plant collection made on windblown sands along the banks of the Columbia River east of The Dalles, Oregon.

Selected by: J.L. Schwendiman, Plant Materials Center, SCS, Pullman, WA.

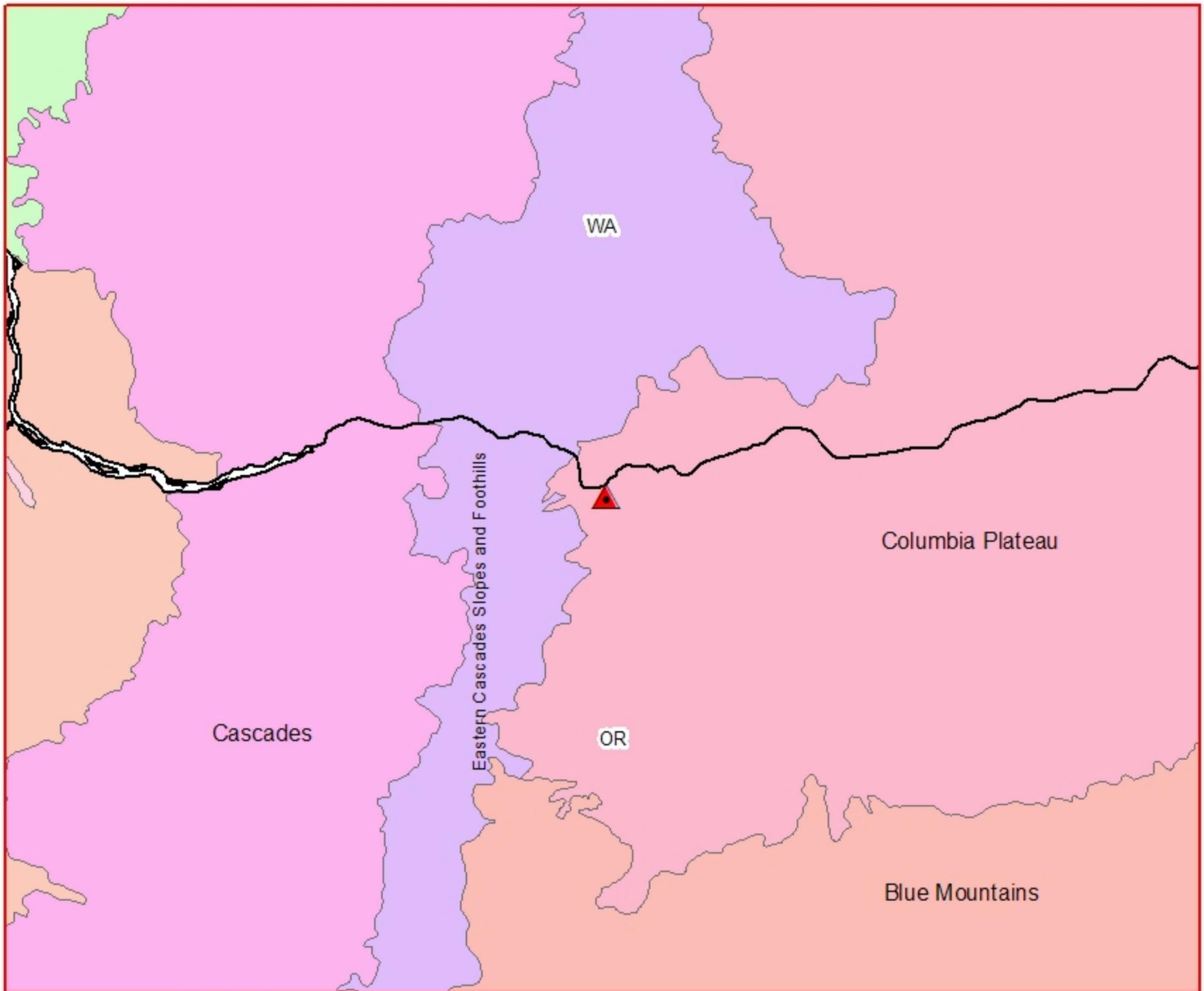
Development: ‘Schwendimar’ was developed from a wild stand of *Elymus lanceolatus* ssp. *lanceolatus*. It was intentionally outcrossed and selected for its quick germination in cold soils and rapid development. Selected by elimination of aberrant plants during several generations. Bulk selections were increased under isolation. ‘Schwendimar’ was released in 1994 by the SCS Plant Materials Center, Pullman, WA.

Description: Rhizomatous, cool-season, perennial sod-forming grass similar in appearance to slender wheatgrass and western wheatgrass. Foliage and culms bluish and glaucous with partial pubescence on the lemma. Long, compact spikes with alternating spikelets on the rachis. Dense, fibrous roots grow shallow, with a few extending beyond 2 ft deep. Grows to 2½ ft high.

References:

1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network-(GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
2. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.
3. USDA, SCS, Plant Materials Program. Conservation plant materials for the conservation reserve program in the Pacific Northwest. http://www.wsu.edu/pmc_nrcs/crp/crptab1.htm. Accessed 4/24/03.
4. USDA, SCS, Plant Materials Center. 1994. ‘Schwendimar’ thick-spike wheatgrass PI 632756. Pullman, WA. www.wsu.edu/~pmc_nrcs/releases/schwen.htm. Accessed 5/22/03.

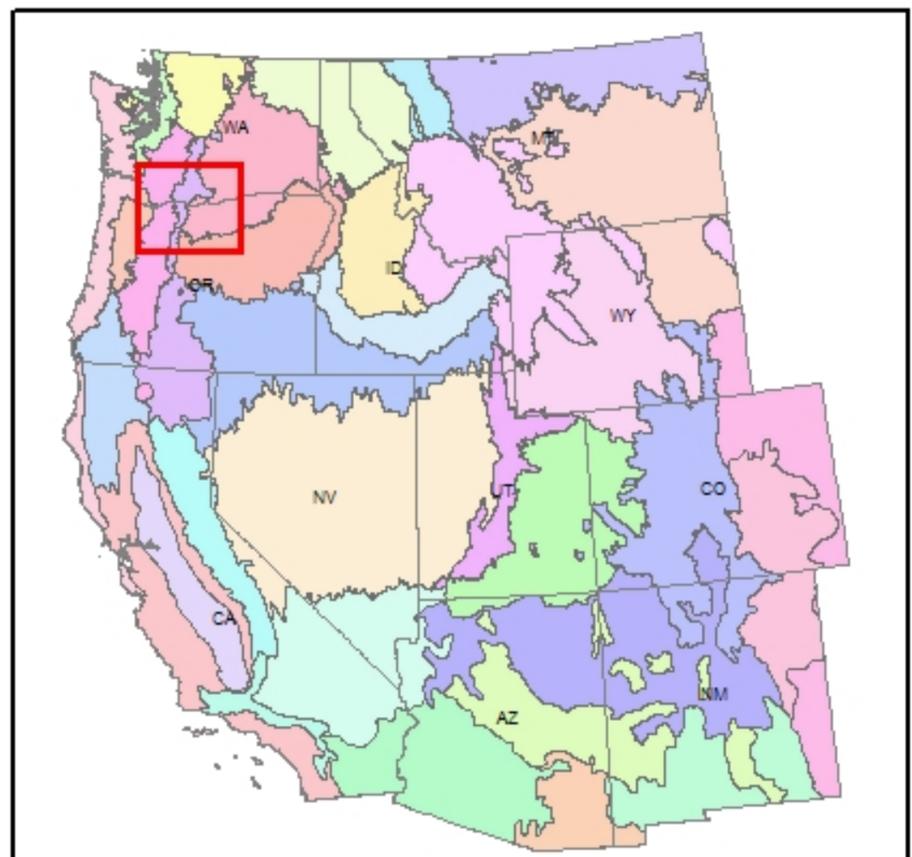
'Schwendimar' Thickspike Wheatgrass



1:1,436,463 Shown with Level III Ecoregions

▲ Collection location

A native collection made on wind blown sands along the banks of the Columbia River, east of The Dalles, OR, in 1934. Previously carried as P-1822.





Grass Cultivar Profile

Secar

Scientific Name: *Elymus wawawaiensis* J. Carlson & M. Barkworth

Common Name: Snake River wheatgrass

Plant Symbol: ELWA2

Plant Introduction Number: PI 440921

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Elymus</i> —wheatgrass
Species	<i>Elymus wawawaiensis</i> J. Carlson & M. Barkworth—Snake River wheatgrass

Collection Location: Snake River Gorge, near Lewiston, ID.

Collection Date: July 5, 1938.

Source: Original collections from a native plant collection identified as *Agropyron spicatum* var. *inerme*, made on the Lewiston Grade in the along the Snake River Gorge, near Lewiston, ID.

Selected by: J.L. Schwendiman, Plant Materials Center, SCS [NRCS], Pullman, WA.

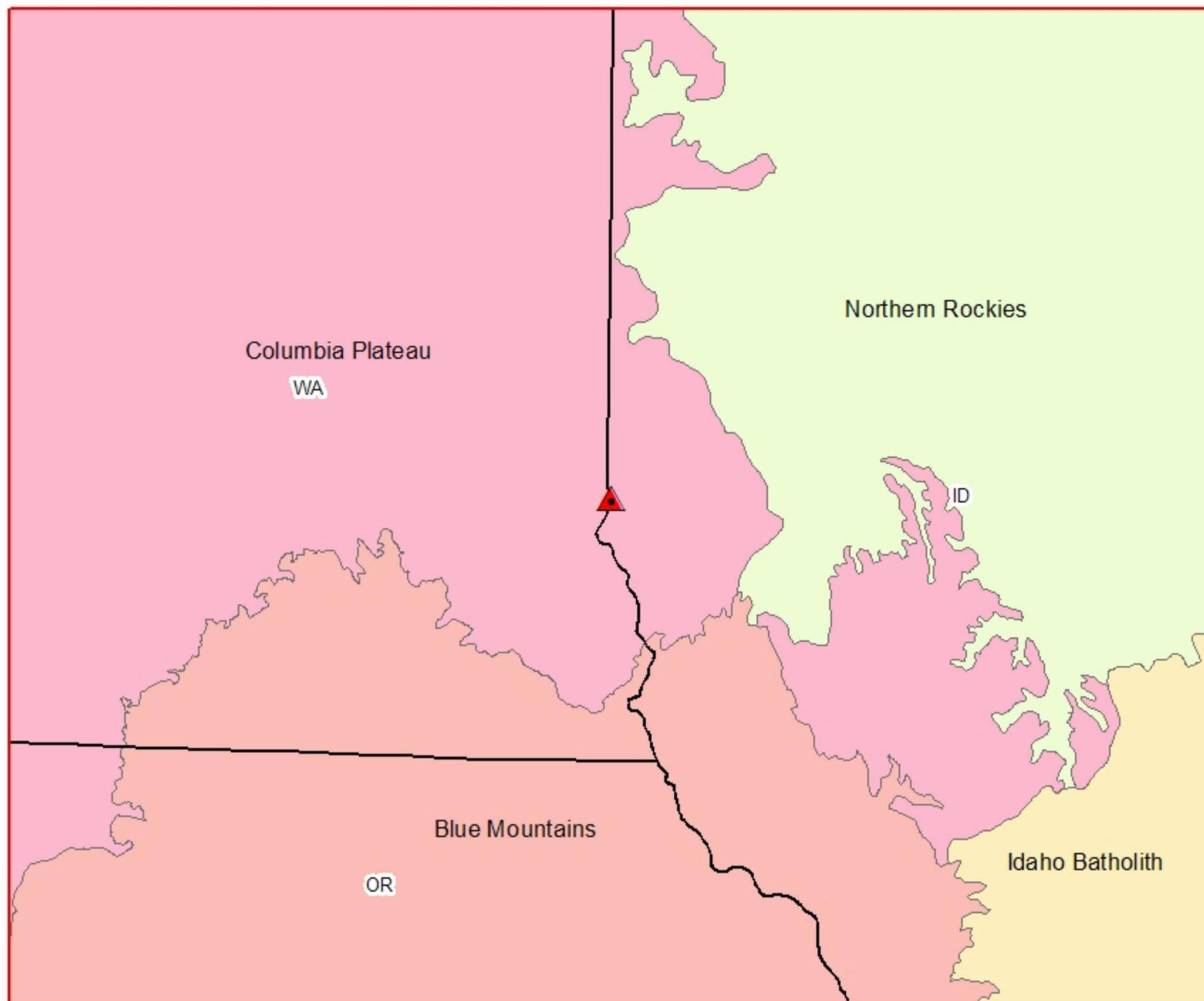
Development: ‘Secar’ was developed from a wild stand; it was not intentionally bred or hybridized but was selected (PI 6409) from a native plant collection of more than 500 beardless and bluebunch wheatgrass collections. That original collection is now recognized as *Elymus wawawaiensis* J. Carlson & Barkworth, Snake River Wheatgrass (Carlson and Barkworth 1997). Its native distribution is valleys of the Snake River and its tributaries in Washington and northern Idaho. It can be confused with bluebunch wheatgrass (*Pseudoroegneria*) but differs in having narrower, acuminate to aciculate glumes; a more imbricate spike; and glabrate basal leaf sheaths. It is an allotetraploid like other *Elymus* species in North America; *Pseudoroegneria* species are either diploid or autotetraploid. ‘Secar’ was selected for drought tolerance and seedling vigor, by mass selection from spaced plantings. The Idaho, Montana, Oregon, and Wyoming Agricultural Experiment Stations; Washington Agricultural Research Center; and the SCS Plant Materials Center, Pullman, WA, cooperatively released ‘Secar’ in 1980.

Description: Long-lived, cool-season, early maturing, densely tufted perennial bunchgrass. Grows 2–3½ ft high, with abundant, glabrous, pale green leaves and numerous fine stems. Seeds small with divergent awns; early-maturing. It is drought-, cold-, and moderately shade-tolerant.

References:

1. Alderson JS and Sharp WC. 1995. Grass varieties in the United States. Agriculture Handbook No. 170. Washington DC: USDA, SCS. http://www.forages.css.orst.edu/Topics/Species/Grasses/Grass_Varieties/. Accessed 7/20/04.
2. Carlson, JR and Barkworth ME. 1997. *Elymus wawawaiensis*: a species hitherto confused with *Pseudoroegneria spicata* (Triticeae, Poaceae). *Pytologia* 83(4):312–330.
3. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
4. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.
5. USDA, NRCS. Snake River Wheatgrass. Plant Fact Sheet. Boise, ID: USDA, NRCS, Idaho State Office. http://plants.usda.gov/factsheet/pdf/fs_elwa2.pdf. Accessed 4/22/03.
6. USDA, SCS. Plant Materials Center. ‘Secar’ bluebunch wheatgrass http://www.wsu.edu/pmc_nrcs/releases/secar.htm. Accessed 4/22/03.

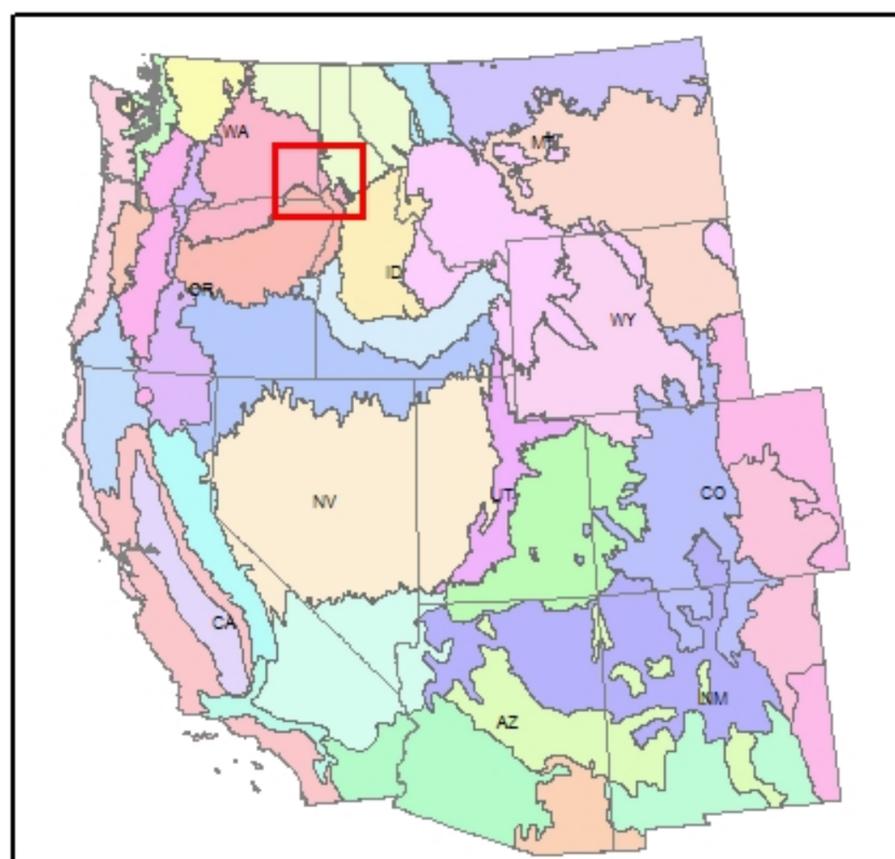
'Secar' Snake River Wheatgrass



1:1,204,094 Shown with Level III Ecoregions

▲ Collection location

A native plant collection on the Lewiston Grade in the Snake River gorge, near Lewiston, ID, on July 5, 1938.





Grass Cultivar Profile

Sherman

Scientific Name: *Poa secunda* J. Presl.

Common Name: Sandberg bluegrass

Plant Symbol: POSE

Plant Introduction Number: PI 578850

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Poa</i> L.—bluegrass
Species	<i>Poa secunda</i> J. Presl.—Sandberg bluegrass

Collection Location: Near Moro, OR.

Collection Date: 1932 and 1935.

Source: Originated from native vegetation near Moro, Sherman County, OR.

Selected by: V.B. Hawk, J.L. Schwendiman, and A.L. Hafenrichter.

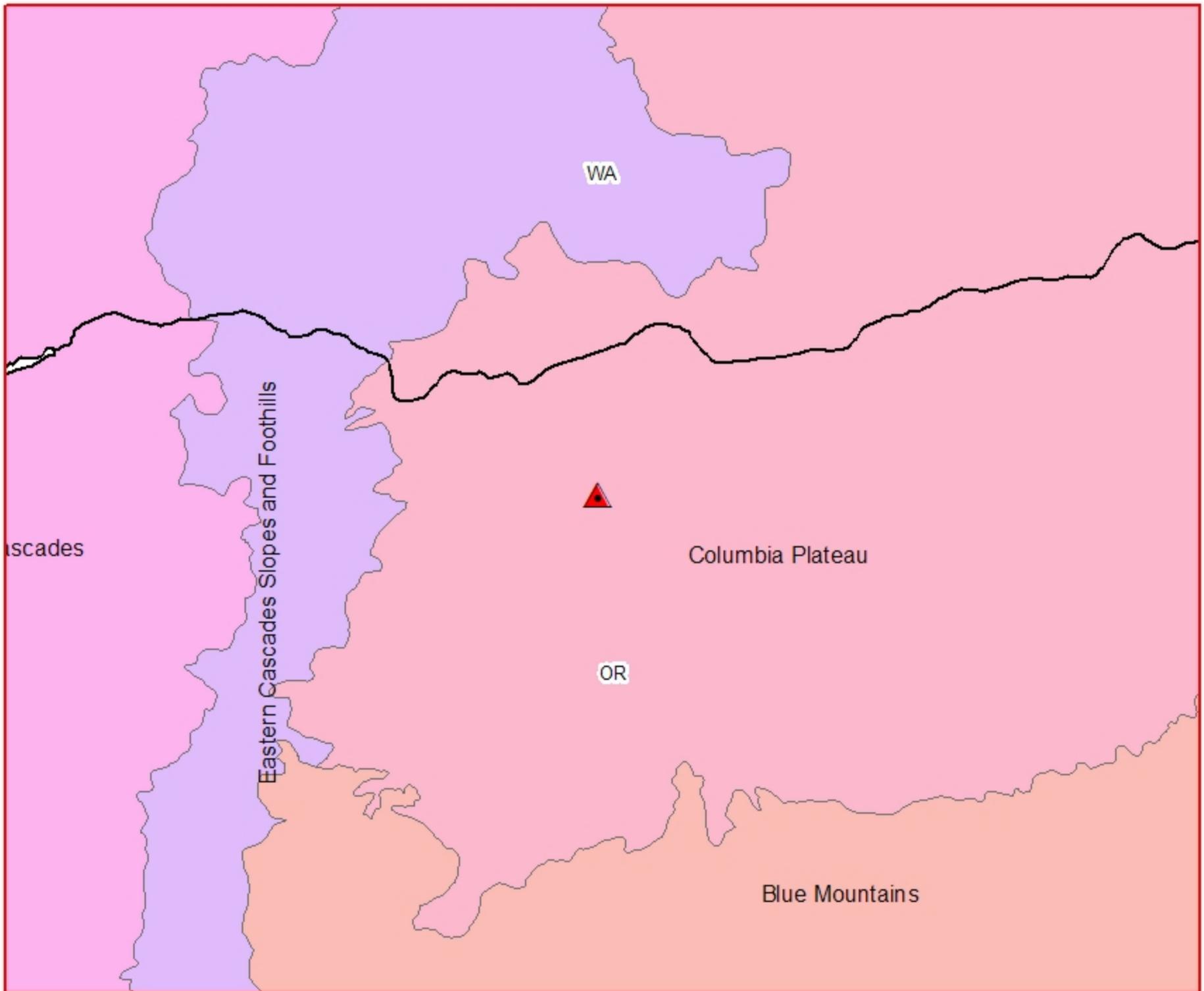
Development: ‘Sherman’ was developed from a wild stand of native *Poa secunda* originally collected by D.E. Stephens, superintendent of the Sherman Branch Experiment Station in Moro, Sherman County OR; it was recollected in 1935 by the USDA, Soil Conservation Service. ‘Sherman’ was selected through comparisons among 178 accessions. The selected accessions were subjected to mass selection and tested by the Washington, Idaho, and Oregon Agricultural Experiment Stations and the SCS Plant Materials Center in Pullman, WA. These agencies cooperatively released ‘Sherman’ in 1945.

Description: Leafy, long-lived, medium-sized, cool-season perennial bunchgrass. Productive, early-maturing. Distinct blue color, grows erect to about 3 ft high, with fine stems. Moderately abundant, long, flat leaves; large, compact seedhead. Panicles erect with abundant seed; seeds shatter easily. Highly fire tolerant, moderately drought tolerant.

References:

1. Alderson JS and Sharp WC. 1995. Grass varieties in the United States. Agriculture Handbook No. 170. Washington DC: USDA, SCS. http://www.forages.css.orst.edu/Topics/Species/Grasses/Grass_Varieties/. Accessed 7/20/04.
2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network-(GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
3. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.
4. USDA, SCS, Plant Materials Center. Sandberg bluegrass. http://plants.usda.gov/factsheet/pdf/fs_pose.pdf. Accessed 02/05/02.

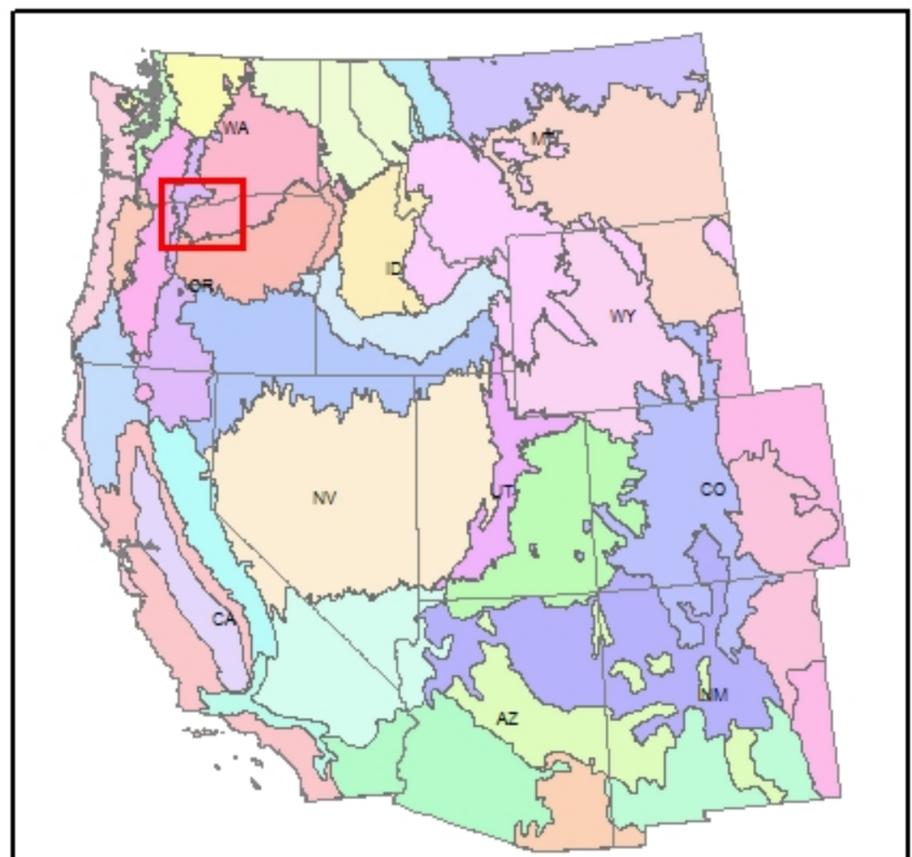
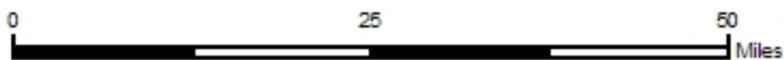
'Sherman' Sandberg Bluegrass



1:1,140,429 Shown with Level III Ecoregions

▲ Collection location

Collected from native vegetation near Moro, Sherman County, OR, by D.E. Stephens, superintendent of Sherman Branch Experiment Station, Moro, in 1932. Re-collected by SCS in 1935.





Grass Cultivar Profile

Sodar

Scientific Name: *Elymus lanceolatus* (Scribn. & J.G. Sm.) Gould ssp. *lanceolatus*

Common Name: Streambank wheatgrass

Plant Introduction Number: PI 578677

Plant Symbol: ELLAL

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Elymus</i> L.— <i>wildrye</i>
Species	<i>Elymus lanceolatus</i> (Scribn. & J.G. Sm.) Gould— <i>streambank wheatgrass</i>
Subspecies	<i>Elymus lanceolatus</i> (Scribn. & J.G. Sm.) Gould ssp. <i>lanceolatus</i> — <i>streambank wheatgrass</i>

Collection Location: Near Canyon City, OR.

Collection Date: Unknown. Prior to 1954.

Source: Original collections of *Elymus lanceolatus* ssp. *lanceolatus* seeds were from a native plant collection made near Canyon City, Grant County, Oregon, at 3,000 ft in an area of 12 in rainfall, by RG Johnson. Collections were identified as *Elytrigia dasystachya*.

Selected by: R.H. Stark and J.L. Schwendiman, SCS Plant Materials Centers, Aberdeen, ID, and Pullman, WA.

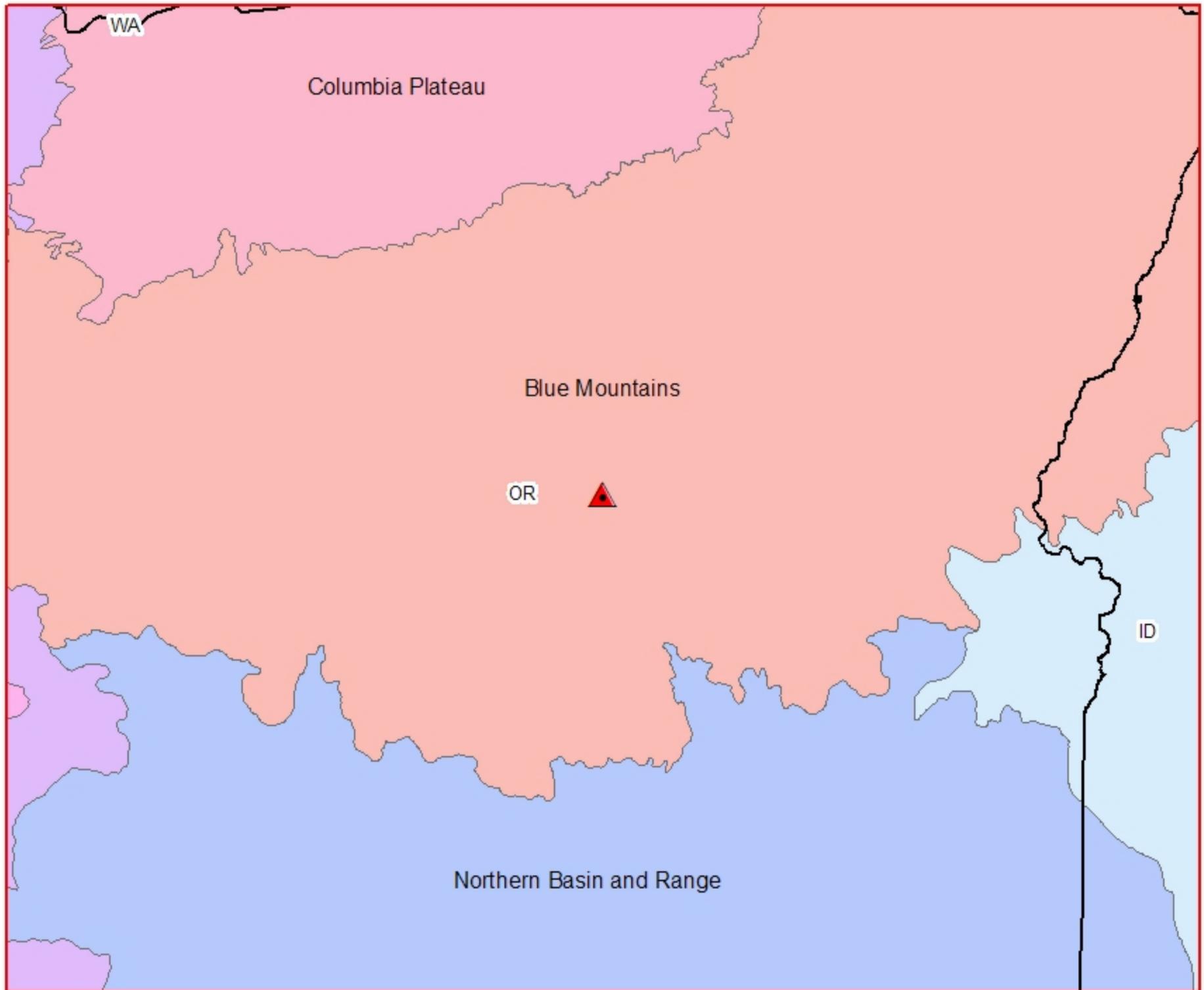
Development: ‘Sodar’ was selected as the best of 11 accessions and improved by mass selection and elimination of aberrants during several generations at the SCS Plant Materials Center, Aberdeen, ID, which cooperatively released ‘Sodar’ in 1954 with the Plant Materials Center, Pullman, WA.

Description: Native short-lived, drought-tolerant, perennial sod-forming grass. Grows 1–3 ft high. Foliage and culms narrow, tough, and gray-green with no pubescence. Strongly rhizomatous, strong seedling vigor. Sodar sods vigorously once established. The leaves are short, narrow, and dominantly basal. Numerous, moderately-short stems and seed heads are produced during the first 2–3 years, or until it becomes fully sodded; thereafter, few stems are formed. Seed heads are mostly awnless, glaucous to pubescent; seeds shatter readily at maturity.

References:

1. Alderson JS and Sharp WC. 1995. Grass varieties in the United States. Agriculture Handbook No. 170. Washington DC: USDA, SCS. http://www.forages.css.orst.edu/Topics/Species/Grasses/Grass_Varieties/. Accessed 7/20/04.
2. Ogle DG. 2000. Streambank wheatgrass. Boise, ID: USDA, NRCS, Idaho State Office.
3. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [online database]. Beltsville, MD: National Germplasm Resources Laboratory. <http://www.ars-grin.gov/npgs>. Accessed 4/22/03.
4. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.
5. USDA, SCS. 1972. Management and uses of ‘Sodar’ streambank wheatgrass. ID.7-N-200000-27. <http://plant-materials.nrcs.usda.gov/pubs/idpmercigellal.pdf>. Accessed 8/13/04.

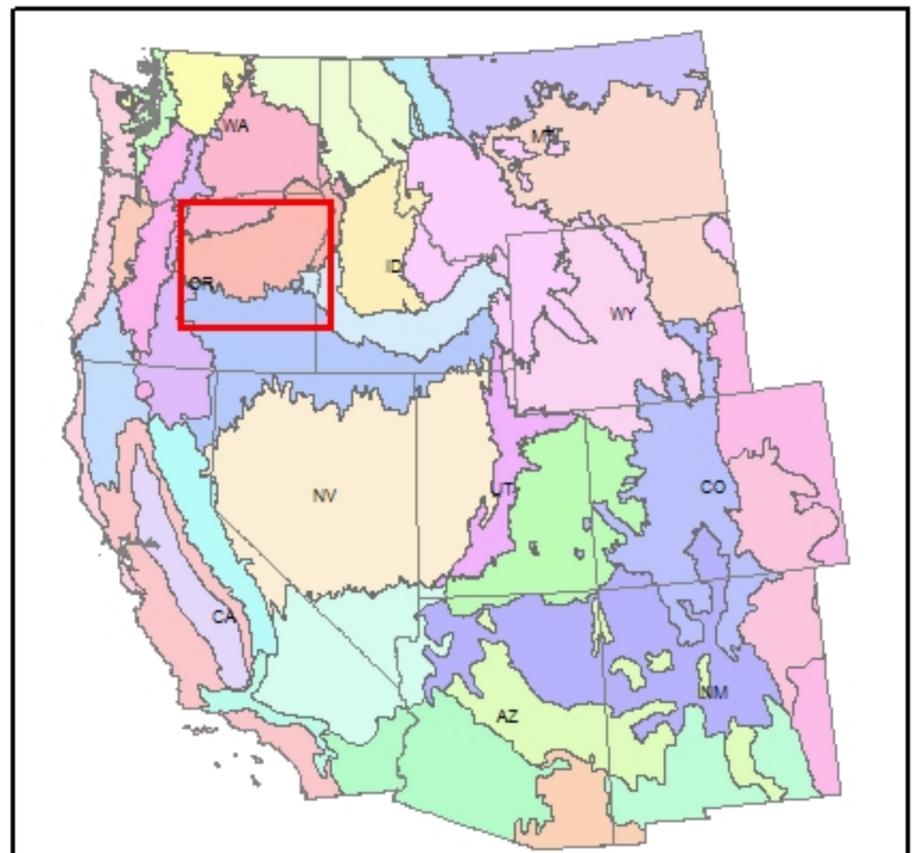
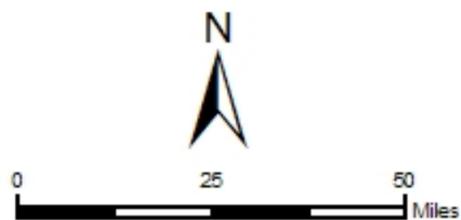
'Sodar' Streambank Wheatgrass



1:2,101,085 Shown with Level III Ecoregions

▲ Collection location

Collected near Canyon City, Grant County, OR,
by R.G. Johnson in area of 305 mm annual rainfall
at elevation of 915 m.





Grass Cultivar Profile

Whitmar

Scientific Name: *Pseudoroegneria spicata* (Pursh) A.
Love ssp. *inermis* (Scribn. & J.G. Sm.) A. Love

Common Name: Beardless wheatgrass

Plant Introduction Number: PI 421022

Plant Symbol: PSSPI

Taxonomy:

Family	Poaceae—Grass family
Genus	<i>Pseudoroegneria</i> (Nevski) A. Love—wheatgrass
Species	<i>Pseudoroegneria spicata</i> (Pursh) A. Love—wheatgrass
Subspecies	<i>Pseudoroegneria spicata</i> (Pursh) A. Love ssp. <i>inermis</i> (Scribn. & J.G. Sm.) A. Love—beardless wheatgrass

Collection Location Near Colton, WA.

Collection Date: Prior to 1946.

Source: Original collections from a native prairie grassland climax near Colton, Whitman County, WA.

Selected by: J.L. Schwendiman, Plant Materials Center, SCS, Pullman, WA.

Development: ‘Whitmar’ was first observed as an outstanding accession in observational tests involving more than 500 beardless and bluebunch wheatgrass collections, which represented six ecotypes. ‘Whitmar’ was developed by mass selection for seedling vigor and production, by the Agronomy Department of the Washington Agricultural Experiment Station and the Plant Materials Center, Pullman, WA. ‘Whitmar’ was developed by selection from a spaced-planted nursery after this ecotype had been tested in outlying nurseries in dryland areas. It was released in 1946 by the Washington, Idaho, and Oregon Agricultural Experiment Stations at Moscow and Corvallis, respectively, and NRCS Plant Materials Centers, Aberdeen, ID, and Pullman, WA.

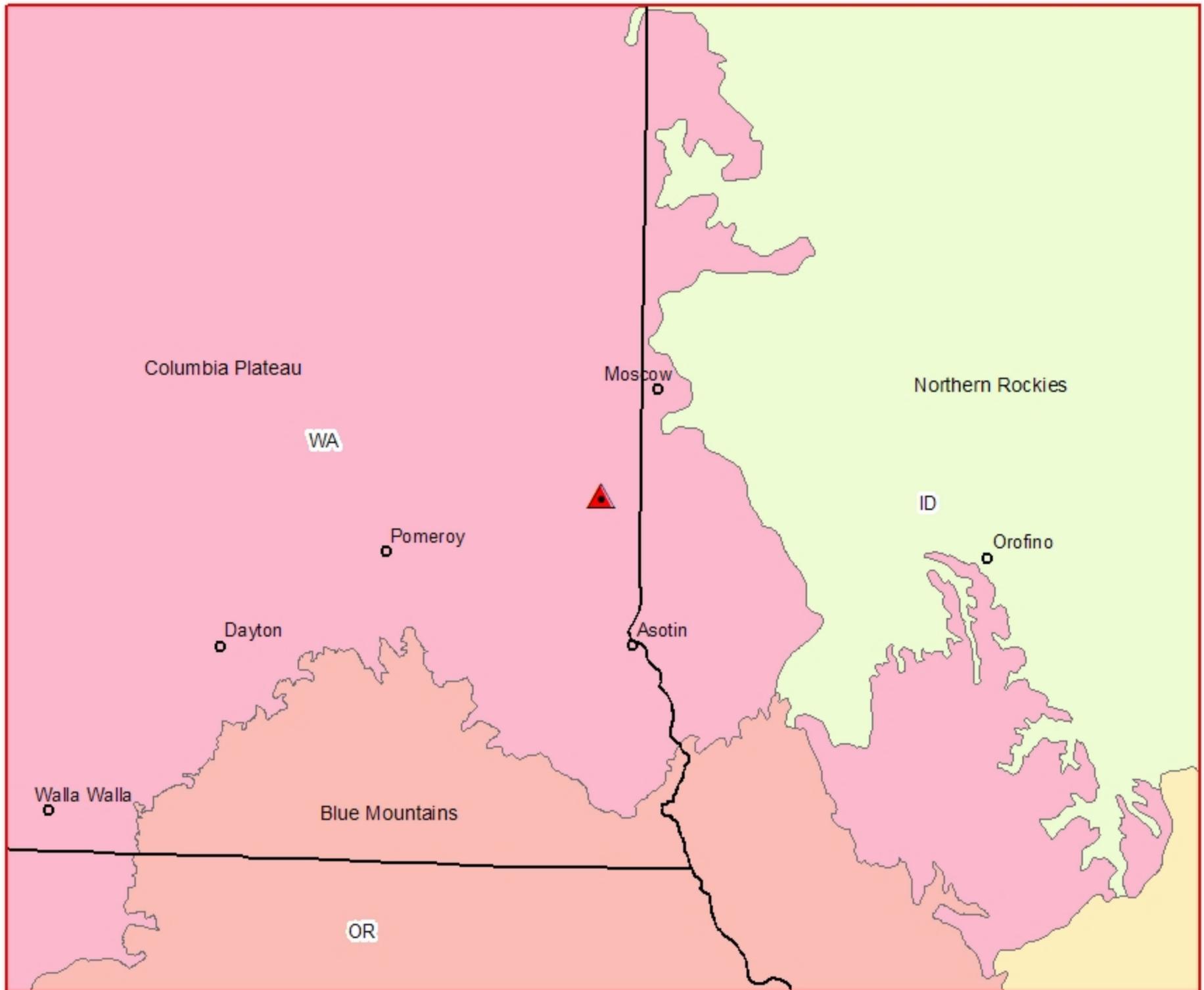
Description: Long-lived, drought-resistant, cool-season perennial bunchgrass. Intermediate type, with moderately abundant, erect to semi-erect, medium-coarse stems. Leaves abundant, soft, lax, flat basal, and cauline. Seeds usually awnless, but short-awned seeds occur occasionally. Good seedling vigor; good spring and fall recovery. Grows in areas of 8–15 in annual precipitation and a wide variety of soils, mostly well-drained, medium to coarse textures.

Native Range: United States—the Rocky Mountain States, the Pacific Northwest, Nevada, and Nebraska.

References:

1. Alderson JS and Sharp WC. 1995. Grass varieties in the United States. Agriculture Handbook No. 170. Washington DC: USDA, SCS. http://www.forages.css.orst.edu/Topics/Species/Grasses/Grass_Varieties/. Accessed 7/20/04.
2. Hein MA. 1958. Registration of varieties and strains of grasses. *Agronomy Journal* 50(11):685–686.
3. Pratt M, Bowns J, Banner R, Rasmussen A. Range plants of Utah. Utah State University Extension. <http://extension.usu.edu/coop/natres/range>. Last updated 7/20/02. Accessed 4/22/03.
4. USDA, NRCS. 2002. The PLANTS Database, Version 3.5. Baton Rouge, LA: Plant Data Center. <http://plants.usda.gov>. Accessed 4/22/03.

'Whitmar' Beardless Wheatgrass



1:1,145,916 Shown with Level III Ecoregions

▲ Collection location

Collected from native Palouse prairie grassland climax near Colton, Whitman County, WA, by L.A. Mullen in area of 500 mm of annual precipitation and elevation of 855 m on palouse silt-loam soil.



0 25 50 Miles

