

## SNAKE RIVER WHEATGRASS

*Elymus wawawaiensis* J.  
Carlson & Barkworth  
Plant Symbol = ELWA2

Contributed by: USDA NRCS Idaho State Office

**Alternative Names**  
bluebunch wheatgrass

**Uses**  
*Grazing/rangeland/wildlife:* Snake River wheatgrass is palatable to all classes of livestock and wildlife. It is a preferred feed for cattle, horses, sheep, elk, deer and antelope at various times during the year. In spring the protein levels can be as high as 20 percent and decrease to about 4 percent protein as the grass matures. Digestible carbohydrates remain about 45 percent throughout the active growth period.

*Erosion control/reclamation:* Snake River wheatgrass is very drought resistant, stands are persistent, and it is adapted to stabilization of disturbed soils. It is very compatible with slower developing natives such as thickspike wheatgrass, western wheatgrass, and needlegrass species. It does not compete well with aggressive introduced grasses. Its drought tolerance, combined with extensive root systems and good seedling vigor make this species ideal for reclamation in areas receiving 10 to 20 inches annual precipitation. The cultivar 'Secar' competes well in areas as low as 8 inches annual rainfall. This grass can be used in urban areas where irrigation water is limited and to stabilize ditchbanks, dikes, and roadsides as a component of a mix.

**Status**  
Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

**Description**  
Bluebunch wheatgrass *Pseudoroegneria spicata* (Pursh) A. Love (formerly *Agropyron spicatum*) and *Elymus wawawaiensis* J. Carlson (formerly *Elymus lanceolatus* ssp. *wawawai*) are perennial

bunchgrasses common to the northern Great Plains and the Intermountain regions of the western United States. They are long-lived cool season native grass with an extensive root system with strong tillers. Bluebunch and Snake River wheatgrasses spread by seed, except in high rainfall zones where some short rhizomes may occur.

Bluebunch wheatgrass is highly variable and grows to 1.5 to 4 feet tall and seed spikes are 3 to 8 inches long. The auricles (ear-shaped appendages where leaf blade and sheath meet) are pointed and semi-clasping to nearly lacking. Leaves are lax, flat to inrolled, 4-6 mm wide and green to blue in color. Leaf sheaths are generally smooth and hairless. Reproductive stems are erect, slender, sometimes wiry with a wavy floral stalk. Seeds have a bristle or awn.

**Adaptation and Distribution**  
Snake River does best on medium to coarse textured soils and can be found on heavy to medium to coarse textured soils over 10 inches deep including fairly sandy sites. It can be seeded on clayey sites. It can be found on thin, rocky sites and on very steep slopes. It will tolerate weakly saline conditions. It can not grow on very acidic sites. It is cold tolerant, is moderately shade tolerant, and very tolerant of fire. It is intolerant of high water tables, poor drainage, and periods of extended inundation.

On native sites Snake River wheatgrass is most abundant in the 8 to 20 inch annual precipitation zones. Seeded varieties do best with 12 to 20 inches of precipitation ('Secar' will do well with 8 to 18 inches) and will tolerate up to 35 inches on very well drained soils. The elevation range is from 500 feet above sea level to 10,000 feet. It is a major component of many native plant communities and generally occupies 20 to 60 percent of the overall composition by weight.

For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

**Establishment**  
This species should be seeded with a drill at a depth of 1/2 inch or less on medium textured soils, 1/4 inch on fine textured soils and 3/4 inch or less on coarse textured soils. Single species seeding rates recommended for this grass are 6 to 8 pounds Pure

Live Seed (PLS) or 19 to 25 PLS per square foot. If used as a component of a mix, adjust to percent of mix desired. For mined lands and other harsh critical areas, the seeding rate should be increased to 40 to 50 PLS per square foot. Seedlings are weaker than crested wheatgrass and a clean firm weed free seedbed is required for establishment (cheatgrass competition can cause stand failure).

Seed in very early spring on heavy to medium textured soils and in late fall on medium to light textured soils. Late summer (August - mid September) seeding is not recommended unless irrigation is available. Dormant fall seedings will prechill seed and reduce seed dormancy.

Snake River wheatgrass establishes fairly quickly for a native grass and stands should be given 3 years to ensure establishment. It is compatible with other species and should be used in seeding mixtures. It should not be seeded with strongly competitive introduced species.

Stands may require weed control measures during establishment. Application of 2,4-D should not be made until plants have reached the four to six leaf stage. Mow weeds at or prior to their bloom stage. New stands may also be damaged by grasshoppers and other insects and pesticides may be needed.

### **Management**

Stands of Snake River wheatgrass should not be grazed until they have firmly established (usually two growing seasons) and started to flower. Six inches of new growth should be attained in spring before grazing is allowed in established stands. The growing tip of Snake River wheatgrass is fairly high and stands can easily be overgrazed. Spring grazing should occur no more than one out of three years and no more than 40 percent utilization should occur during rapid growth. Heavy early spring grazing is especially damaging and grazing should be delayed until flowers are halfway emerging from the protecting leaf. No more than 60 percent utilization should occur after seed ripens.

Snake River wheatgrass can be used for hay production and will make nutritious feed, but is more suited to pasture/rangeland use.

### **Environmental Concerns**

Snake River wheatgrass is long lived and spreads primarily via seed distribution. It is not considered a "weedy" or invasive species, but can spread into adjoining vegetative communities under ideal climatic and environmental conditions. Most

seedings do not spread from original plantings. It is a cross pollinating species and is known to cross with bluebunch wheatgrass, thickspike wheatgrass, quackgrass and bottlebrush squirreltail. These crosses broaden the gene pool and do not generally dominate a site or crowd out the native ecotype and in many cases are sterile.

### **Cultivars, Improved, and Selected Materials (and area of origin)**

'Secar' was originally identified as a variety of bluebunch wheatgrass. The original collection site is along the Snake River gorge near Lewiston, Idaho. 'Secar' was released by the Idaho-Oregon-Montana-Wyoming AES, Washington Agriculture Research Center, and Pullman, WA Plant Materials Center in 1980. It is one of the most drought tolerant native perennial grasses presently available and can survive down to 8 inches rainfall. It is a bunchgrass with good seedling vigor and establishes well under droughty conditions. 'Secar' is intended for use on rangeland for re-establishment of native plant communities. Certified seed is available and breeder seed is maintained by Pullman PMC. Foundation and registered seed is available through the appropriate state Crop Improvement Association or commercial sources to grow certified seed.

### **Prepared By & Species Coordinator:**

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For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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