

## PURPLE NEEDLEGRASS

*Nassella pulchra* (A.S. Hitch.)

**Barkworth**

Plant Symbol = NAPU4

*Contributed by: USDA NRCS California State Office  
and Lockeford Plant Materials Center, California*



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### Alternate Names

Purple stipa, purple tussockgrass

### Uses

This is a great plant for dry land restoration and range improvement, because it is very long-lived and tolerates poor soils. It is valuable for erosion control because of its strong root system and it will establish well on disturbed areas and thin soils. It seems to grow well on previously disturbed soils, because it is often seen sprouting on roadsides and on gopher mounds. It greens up early in the season and provides good quality early forage for grazing animals.

### 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

Grass Family (Poaceae). Purple needlegrass is a densely tufted, long-lived, upright perennial bunchgrass with conspicuous awns. It has numerous basal leaves and a distinct nodding habit. The leaf blades are smooth to finely hairy. Basal blades are long, flat and 2.4 - 6 mm (.9 - .24 inch). It becomes

dormant after seed production, but begins growth again with the first fall rains. *Nassella pulchra* is California's state grass.

### Distribution

Purple needlegrass occurs on the west side of the Coast Ranges from northern Baja California north to the Oregon border. The species also occurs in the Central Valley and foothills of the Cascade Range and Sierra Nevada, and on the Channel Islands. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

### Adaptation

Purple needlegrass grows in oak woodland, chaparral, and grassland in areas receiving between 20 - 76 cm (8 and 30 inches) of rainfall. It is usually not found in dense stands, though it can be, even though it is widespread. It is well adapted to droughty soils and clay soils and grows well in full sun as well as partial shade. It is tolerant of extreme summer heat and drought conditions as well as serpentine soils.

### Establishment

Purple needlegrass does not like disturbance once it is established. It does not compete well with annual grassy or broadleaf weeds during its establishment phase because of its slow growth during the first year. It needs bare ground to re-seed, but re-seeds readily and increases its range once it is established. Stands are usually maintained by abundant seed production in non-grazed or slightly grazed areas.

### Management

Purple needlegrass needs some protection from grazing during flowering to ensure formation of the seed and to allow food storage in the crown. The awns can cause livestock injury. After seeds are dropped, the sharp points are drilled into the soil by the twisting and untwisting of the long awns. It has a good tolerance for mowing, especially after seed maturity, but it can be mowed earlier. Purple needlegrass is generally fire tolerant and it may benefit from a burn. In fact, it has been noted that seeds are produced more abundantly the year after a fire. The season during which the fire occurs may determine the effects on the grass. It typically will re-sprout after spring or fall burns, but not as well after summer burns. Larger plants often do not recover as well, due to higher crown temperatures. Some ecotypes have partial flood tolerance.

### **Seeds and Plant Production**

Seed matures mid- to late spring, and can be collected for 2 - 4 weeks. It shatters very quickly during hot, dry weather. There are between 51,500 and 100,000 seeds/lb., and if planted at a rate of 1 lb./acre, there will be approximately 1.7 seeds/square feet.

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

'LK 315d Germplasm': Found in Alameda County, California; Mines Rd.; Boy Scout Camp (Rancho Los Mochos). Township 4S Range 4E Section 13. Elevation is approximately 2056 feet. Mean annual precipitation is 14-35 inches. Mean annual temperature is 58-63 degrees F.

'LK 215e Germplasm': Found in Colusa County, California; Walnut Valley Ranch; near Lodoga CA. Township 17N Range 6W Section 25. Elevation is approximately 1280 feet. Mean annual precipitation is 19.8 inches. Mean annual temperature 58.4 degrees F.

'LK 115d Germplasm': Found in Tehama County, California; along Highway 36 approximately 0.3 miles west of the intersection of Highway 36 and Bowman Road. Township 28N Range 6W Section 13. Elevation is approximately 2300 feet. Annual precipitation is approximately 25 inches.

### **References**

USDA Forest Service. 2002. *Distribution and occurrence- species: Nassella pulchra*. Accessed: 01Sep2005.  
[http://www.fs.fed.us/database/feis/plants/graminoid/naspul/distribution\\_and\\_occurrence.html](http://www.fs.fed.us/database/feis/plants/graminoid/naspul/distribution_and_occurrence.html).

USDA NRCS. *Notice of release of purple needlegrass for major land resource area 15d selected class of natural germplasm LK 115d germplasm*. Plant Materials Center, Lockeford, California.

USDA NRCS. *Notice of release of purple needlegrass for major land resource area 15e selected class of natural germplasm LK 215e germplasm*. Plant Materials Center, Lockeford, California.

USDA NRCS. *Notice of release of purple needlegrass for major land resource area 15d selected class of natural germplasm LK 315d germplasm*. Plant Materials Center, Lockeford, California.

Wrynski, Jeanette. 2000. *Know your natives: A pictorial guide to California native grasses, creeping wildrye*. Yolo County Resource Conservation District, Woodland, California.

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