



United States Department of Agriculture  
Natural Resources Conservation Service  
Plant Materials Program

# Baskett Slough Germplasm

## California oatgrass

*Danthonia californica* Bolander

A Conservation Plant Release by USDA NRCS Corvallis Plant Materials Center, Corvallis, Oregon



Baskett Slough Germplasm California oatgrass. Photo by Dale Darris.

Baskett Slough Germplasm is a selected class pre-variety of California oatgrass (*Danthonia californica*) released in 2000 by the USDA Natural Resources Conservation Service in cooperation with the Oregon Agricultural Experiment Station and the U.S. Fish and Wildlife Service. It is intended for conservation use primarily at lower elevations in the Willamette Valley region of western Oregon and southwestern Washington.

### Description

Like the species in general, this selection is a long-lived, cool season, native perennial bunchgrass. The foliage is medium textured and primarily basal, but with some leaves extending up the stem (culm). The stems grow 2 to 3ft in height and are smooth to moderately hairy with a fringe of spike-like hairs at the leaf collar. They terminate in a sparse, open seedhead (panicle) that flowers from late May to early June and produces cross-pollinated seed by early July. Self-fertilized seed is produced along the lower portion of the stem and is enclosed within the leaf sheath. Baskett Slough

Germplasm establishes slowly compared to certain other native grasses and does not flower until the second full growing season.

### Source

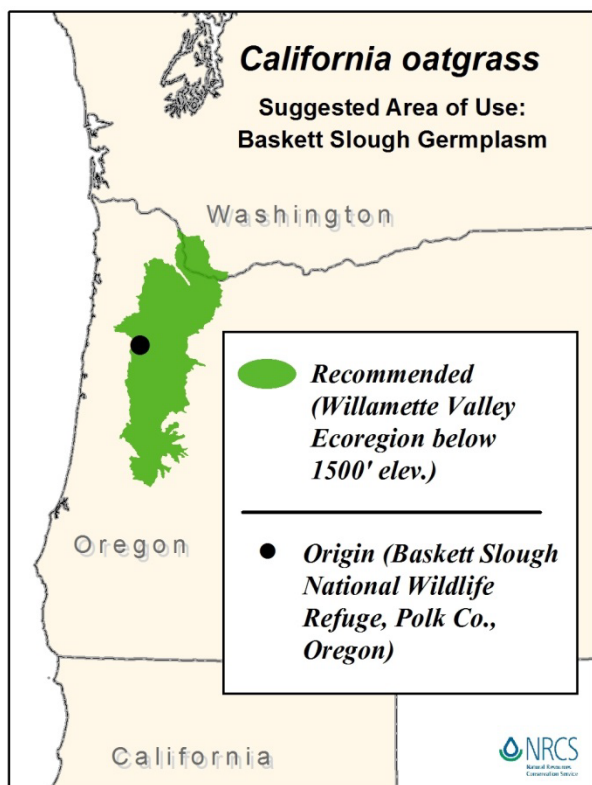
Baskett Slough Germplasm (9040747, PVGOR1) originates from seed collected in 1982 and 1999 from two disjunct sites within the Baskett Slough National Wildlife Refuge, Polk County, Oregon, near Rickreall (123°15' W long., 45°00' N lat.). It was not bred or hybridized. However, specimens representing the 1982 collection ranked high in seed production, vigor, foliage appearance, and basal width compared to 59 other sources in a common garden study conducted at the Corvallis Plant Materials Center. A wider collection within the Refuge in 1999 added greater genetic diversity to the original population. The germplasm was also chosen for the parent population's Willamette Valley location and the long term sustainability of the site as a source of seed.

### Conservation Uses

The recommended uses for Baskett Slough Germplasm include upland and riparian revegetation, erosion control, and restoration of oak savannas and meadows. California oatgrass is a definitive component of certain prairies that form critical habitat for endemic wildlife as well as beneficial invertebrates such as butterflies and beetles. The foliage and seed is consumed by small mammals and the seed is eaten by birds. Other potential uses include perennial cover in vineyards and young orchards, restoration of transitional zones surrounding seasonal wetlands, and low input sustainable turf. However, further testing is needed. California oatgrass is considered good quality forage, but commonly lacks productivity.

### Area of Adaptation and Use

The anticipated area of adaptation and suggested area of use for Baskett Slough Germplasm is the Willamette Valley ecoregion of western Oregon and southwestern Washington (Cowlitz and Clark Counties) below an elevation of 1,500 ft. Adaptation and use may extend beyond this area, but further evaluation is needed. Adaptation includes both dry and moist sites in full sun to partial shade, prairies, oak savannas, and open woodlands with well-drained to moderately well-drained loam to silty clay soils that are neutral to moderately acidic. While the species inhabits a wider array of sites ranging from poorly-drained, less permeable soils in wetlands to dry, infertile south slopes, shallow rocky outcrops, and serpentine soils, the tolerance of Baskett Slough Germplasm to such conditions is not yet determined.



Suggested area of use for Basket Slough Germplasm California oatgrass. Map by Ian Reid.

### Establishment and Management for Conservation Plantings

Basket Slough Germplasm has seed dormancy that inhibits or delays germination. It can be overcome by fall sowing to degrade the seed coat in the soil during winter and allow for germination by late winter to early spring. If proper safety precautions are taken, the seed can also be soaked in 50% dilute sulfuric acid for 5 to 20 minutes to scarify the coat and allow for germination 7 to 14 days after sowing. Mechanical scarification (for example abrasion of the seed coat with sandpaper after hulling) usually causes excessive seed damage and is not recommended. Sow very shallow ( $\frac{1}{4}$  inch deep or less) into a firm, weed-free seedbed. There are 90,000 to 165,000 seeds/lb, so each pound of seed planted per acre results in 2 to 4 seeds per square ft. The suggested rate for drilling is 9 to 15 lb/acre (double for broadcast seeding). Fall planting untreated seed alone allows for weed control with a post planting application of nonselective herbicide prior to emergence of oatgrass seedlings. A starter fertilizer is usually not recommended as it encourages excessive weed competition. Transplanting plugs grown in standard potting media has worked better than direct seeding in some situations.

### Ecological Considerations

Basket Slough Germplasm has few significant pests, but the species is one of many hosts for blind seed disease

(*Gloeotinia temulenta*), a potentially serious pest in ryegrass (*Lolium* spp.) grown for seed. This selection is not considered weedy within the suggested area of use. However, because of seed dormancy, individuals may continue to sporadically emerge several years after stand removal. No toxicity has been reported for livestock.

### Seed and Plant Production

Basket Slough Germplasm should be fall sown in 12 to 18 inch wide rows at a rate of 8 to 10 lb/acre. Wider rows may be needed if tillage is used. There are pre-emergent herbicides that can be used for weed control in established stands of California oatgrass, but not new ones. Certain broadleaf weed control herbicides can be applied to both new and established stands. Irrigation is typically not required but fields should be fertilized in March with 75 lb of nitrogen/acre. When harvesting, the combine should be aggressive enough to dislodge seed retained within the stem. This selection yields 50 to 100 lb/acre of seed. To produce seedlings as plugs, use seed that has been moist chilled for 90 days or acid scarified. Otherwise, fall sow containers and leave outdoors over winter.

### Availability

*For conservation use:* Basket Slough Germplasm seed is only available from a few specialized growers.

*For seed or plant increase:* G1 seed will be maintained by the NRCS Corvallis Plant Materials Center. Certified G1 seed is available to growers for G2 and G3 seed production.

*For more information, contact:*  
USDA-NRCS Corvallis Plant Materials Center  
3415 NE Granger Ave.  
Corvallis, Oregon 97330  
Phone: 541-757-4812, Fax: 541-757-4733  
<http://plant-materials.nrcs.usda.gov/orpmc/>

### Citation

USDA Natural Resources Conservation Service. 2013. Release brochure for Basket Slough Germplasm California oatgrass (*Danthonia californica*). USDA-NRCS, Corvallis Plant Materials Center, Corvallis, OR.

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

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