

# WESTERN GOLDENTOP

*Euthamia occidentalis* Nutt.

Plant Symbol = EUOC4

**Common Names:** western goldenrod

**Scientific Names:** *E. californica* Gandog., *E. linearifolia* Gandog., *Solidago occidentalis* (Nutt.) Torr. & A. Gray

### Description

**General:** Composite family (Asteraceae). Western goldentop is a rhizomatous perennial forb with erect stems reaching as much as 2m (6 ft) in height. The erect stems have many sessile, cauline, leaves, linear in outline 2 to 10 cm (0.8 to 4 in) long and 1 to 10 mm wide. The inflorescence is a large, flat-topped corymb composed of multiple small yellow flower heads. The fruit is a small achene with numerous white capillary bristles (Cronquist et al., 1994).



The PLANTS Database lists western goldentop as having 250,000 seeds/lb (USDA NRCS 2017), however the authors feel this number is excessively low. Canada goldenrod (*Solidago canadensis*), a close relative with similar flower and seed morphology, has over 4 million seeds per pound. We feel 2,500,000 may be a more realistic figure for this species, but no official seed counts were made.



Figure 2. Distribution of western goldentop. Figure courtesy of PLANTS Database.

**Distribution:** Western goldentop is found in western North America from Nebraska west to California, north to British Columbia and south to Arizona and New Mexico. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

**Habitat:** Western goldentop is commonly found in riparian areas, coastal salt marshes, freshwater wetlands, and wet meadow habitats, often growing in association with cattail, rushes, and sedges (Hickman, 1993, Welsh et al., 2003).

### Adaptation

Western goldentop is adapted to the wetter environments in the west. It requires approximately 400 to 800 mm (16-32 in) mean annual precipitation (USDA NRCS 2017), but can be found in riparian or marshy environments in areas receiving less precipitation. It is adapted to a broad range of soil textures and can grow in pH levels of 4.5-7.0 (USDA NRCS 2017).

### Uses

**Pollinators:** Western goldentop is an excellent species for pollinator habitat in riparian and wet meadow areas in the west. It is attractive to bees and butterflies, and is a noted monarch nectar plant for the Rocky Mountain and California Coast regions (Fallon et al., 2016a; Fallon et al., 2016b). It is also a good rhizomatous candidate for increasing diversity and adding pollinator value to grass filter strips (Mäder et al., 2014).

**Agriculture:** Western goldentop has been used successfully in hedgerows in Central California (Long and Anderson, 2010). Benefits of hedgerow plantings include enhanced weed control, air and water quality protection, soil erosion control, biodiversity and increased beneficial insect activity.

**Livestock:** Western goldentop has low palatability to livestock (USDA NRCS 2017).

### **Status**

*Threatened or Endangered:* No.

**Wetland Indicator:** Western goldentop is considered a facultative wetland species (FACW) in the Arid West and Western Mountains, Valleys, and Coast, and an obligate (OBL) wetland species in the Great Plains (USDA NRCS 2017).

### **Planting Guidelines**

The full stand rate for an estimated 2,500,000 seeds per pound would be approximately 1 lb/ac. The actual seeding rate should be adjusted to reflect the desired percentage of the overall mix.

Aberdeen Plant Materials Center produced containerized western goldentop from seed originating in Yosemite National Park. Five to ten seeds were placed on the soil surface and pressed for good seed-to-soil contact into Sunshine Mix #4. Seed was lightly covered with pea gravel, and the soil surface kept moist with 20 minutes of daily irrigation from overhead sprinklers for the first 30 days. Day time greenhouse temperatures ranged from 24 to 29° C (75 to 85° F). Night time temperatures averaged around 21° C (70° F). The seed lot had very high viability and most cones contained multiple plants and required significant thinning as too many plants per cone significantly retarded growth. After full establishment, plants were fertilized once per week with Miracle Grow All Purpose Plant Food (15-30-15). After 30 days the irrigation schedule was changed to 40 to 60 minutes every other day to encourage root growth (Tilley, 2016).

### **Management**

Western goldentop should be used as a minor component of pollinator and restoration seed mixtures. Management strategies should be based on the key species in the established plant community. Grazing should be deferred on seeded lands for at least two growing seasons to allow for full stand establishment (Ogle et al., 2014).

### **Pests and Potential Problems**

There are no known pests or potential problems associated with this species.

### **Environmental Concerns**

Western goldentop is native to western North America. It will spread under favorable conditions but does not pose any environmental concern to native plant communities under proper management.

### **Seeds and Plant Production**

Small scale field and wildland collections can be made by beating the seeds off the plant into a bin or bag, or by clipping the flower heads. Seed is cleaned by running the collected material through a hammer mill or brush machine followed by sieving and air-screening.

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

Limited quantities of wildland collected seed may be available from commercial sources. There are currently no commercial releases of western goldentop. Seed sources should be selected based on the local climate, resistance to local pests, and intended use. Consult with your local land grant university, local extension or local USDA NRCS office for recommendations for use in your area.

### **Literature Cited**

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#### **Citation**

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