

## RUBBER RABBITBRUSH

*Ericameria nauseosa* (pallas ex Pursh) G.L. Nesom & Baird  
Plant Symbol = ERNA10

Contributed by USDA NRCS Plant Materials Center,  
Pullman, Washington



Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center,  
[www.wildflower.org](http://www.wildflower.org)

### Alternate Names

Grey rabbitbrush, golden rabbitbrush, chamiso blanco,  
*Chrysothamnus nauseosus* (Pallas ex Pursh) Britton,  
*Chrysocoma nauseosa* Pallas ex Pursh, *Bigelovia*  
*nauseosa* Gray

### Uses

**Forage:** Rubber rabbitbrush has marginal value for all classes of livestock and has occasionally been reported to be toxic (Stubbendieck et al. 2003). It is, however, an important browse species on depleted range land and can be heavily used by wildlife during winter months (Utah State University 2009). Halls et al. (1994) report browsing animals, especially mule deer, use rubber rabbitbrush as

forage in winter months but not in summer because the leaves have fewer secondary volatile chemicals in winter. Bhat et al. (1990) found some accessions of rubber rabbitbrush ranked high in crude protein, phosphorus and digestibility in comparison to other winter browse species, and suggested these accessions could be selected for superior germplasm releases.

**Wildlife habitat:** The leaves, flowers and seeds of rubber rabbitbrush are a food source for deer, antelope, elk, small mammals and birds. The plant also provides cover for small mammals and birds such as jackrabbits and sage grouse.

**Pollinator habitat:** Rubber rabbitbrush attracts a wide array of native insects, including butterflies and small bees (Utah Native Plant Society 2009; Ogle et al. 2007). It is one of the few native plant species in the Intermountain West that provides habitat for pollinators during the late summer and fall months (Ogle et al. 2007).

**Range revegetation:** Rubber rabbitbrush is deep rooted and produces heavy litter (Aldon and Pase 1981) and has the potential to stabilize soils, moderate soil temperature and moisture, as well as add aesthetic value to degraded land (Romo and Eddleman 1994).

**Erosion control:** Rubber rabbitbrush grows rapidly and produces abundant seed (Romo and Eddleman 1994). It can be used to stabilize roadsides and other critical areas.

**Mine reclamation:** The plant is able to grow on a variety of substrates, including sand, shale, slickrock and other unusual substrate types (Meyer et al. 1989) and is an ideal plant for mine reclamation.

**Ethnobotanical:** The Hopi stripped the bark from the branches of rubber rabbitbrush and used the branches for basket weaving (Stubbendieck et al. 2003). The Navajo used the flowers to make yellow dye (Lady Bird Johnson Wildflower Center 2009). Native Americans also used rubber rabbitbrush for chewing gum, tea, cough syrup, and to treat chest pains (Stubbendieck et al. 2003). During World War II the plant was studied as a substitute for commercial rubber, and currently it is a small commercial rubber source (Utah State University 2009).

**Ornamental:** The attractive, late-blooming flowers, silvery-green foliage, and drought tolerance of rubber rabbitbrush make it a desirable plant for low maintenance and sustainable landscaping. It is recommended by the Utah Native Plant Society (2009) as a screen or background for summer flowers.

The plant can be cut back after fall flowering to prevent seed dispersal and to retain its compact, rounded shape (Utah Native Plant Society 2009).



Tad Dillhoff, Burke Museum of Natural History and Culture, University of Washington  
<http://biology.burke.washington.edu/herbarium/imagecollection.php>

### Status

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

*General:* Composite family (Asteraceae). Rubber rabbitbrush is a native, perennial, warm-season shrub that grows to 1 to 8 feet tall. It has a rounded crown and stems originating from its base. Stems are yellowish green, flexible, erect and spreading, and are covered with a dense felt-like layer of white hairs. Leaves are 0.75 to 2.75 inches long, 0.02 to 0.12 inches wide, alternate, linear to spatula shaped with entire margins, 1 to 3 nerved, and are also covered with white hairs. Flowers are yellow, tubular, 0.25 to 0.4 inch long, arranged in terminal, rounded clusters. The flower bracts are narrow, layered and papery. Flowers begin bloom in late July in cool montane environments, in October in hot desert environments, and at variable times in cold desert environments (Meyer et al. 1989). Inflorescences and seed bracts often persist through winter. Seeds are achenes with pappus and are wind disseminated. Reproduction is primarily by seeds and epicormic buds. Out-crossing is infrequent (Anderson 1966).

The species is taxonomically complex, and was previously divided into 22 subspecies. The 22 subspecies have been reorganized into two subspecies and 22 varieties (ecotypes) (USDA-NRCS 2009). The 22 ecotypes exhibit a great deal of variability in morphological characteristics and chemical composition.

*Distribution:* *Ericameria nauseosa* is present in New York and all western states in the United States, and in the Canadian provinces of Alberta, Saskatchewan, and British Columbia. Subspecies *cosimilis* has 8 varieties found

primarily in the southwestern United States. Subspecies *nauseosa* has 14 varieties found throughout the western United States and Canada. Different varieties are often found growing in adjacent habitats of the same locality (Meyer et al. 1989). For current distributions, please consult the Plant Profile page for this species on the PLANTS Web site.

*Habitat:* Rubber rabbitbrush inhabits dry, open areas on plains, valley bottoms, foothills and mountains. It is associated with many ecological sites, including: oak-hickory, elm-ash-cottonwood, ponderosa pine, sagebrush, desert shrub, chaparral-mountain shrub, pinyon-juniper, and mountain, plains and desert grasslands (Tirmenstein 1999). It is considered to be an early- to mid-seral species, and may dominate some sites following a disturbance. Over time it usually declines and becomes a minor component of the native plant community (Tirmenstein 1999).

### Adaptation

Rubber rabbitbrush is adapted to cold, dry environments receiving 7 to 18 inches of annual precipitation at elevations ranging from 450 to 8,000 feet (Tirmenstein 1999). Depending on the ecotype, rubber rabbitbrush can be found on loamy, sandy, gravelly or heavy clay soils that are slightly acidic, slight to strongly basic, or saline. Some ecotypes have a great deal of plasticity, allowing them to establish in a variety of habitats (McArthur 1979).

### Establishment

Rubber rabbitbrush can be established by transplanting seedlings, or drilling or broadcasting seed. Planting can be done in spring or fall, on prepared or unprepared seedbeds (Tirmenstein 1999). Rubber rabbitbrush should be seeded in a mixture with forbs and grasses at a rate of 0.025 pound Pure Live Seed (PLS) per acre (Ogle et al. 2009). This rate should be doubled if the seed is broadcast.

Romo and Eddleman (1994) determined rubber rabbitbrush had the highest seedling establishment when seeded prior to or during periods when seedbed temperature was between 68 and 86 degrees Fahrenheit, and when soil moisture was near its seasonal high. Cox and Anderson (2004) had better success establishing rubber rabbitbrush and other vegetation when seeded into stands of crested wheatgrass (*Agropyron cristatum* [L.] Gaertner) as opposed to seeding in stands dominated by cheatgrass (*Bromus tectorum* L.).

### Management

Rubber rabbitbrush is often associated with non-native invasive plants which establish at the same time following a disturbance (Enloe et al. 2009). However, the presence of rubber rabbitbrush may actually reduce the severity of weed invasion (Krueger-Mangold et al. 2006). Where land managers intend to control invasive weeds while minimizing damage to rubber rabbitbrush, application of chlosulfuron may be an effective strategy (Enloe et al. 2009).

A number of land managers consider rubber rabbitbrush to be undesirable due to its low forage value (Romo and Eddleman 1988). However, in some areas it may actually enhance the growth of desirable plants. Frischknecht (1963) found late summer and fall growth of crested wheatgrass was more lush under rabbitbrush than under sagebrush or in the open. He attributed this result to the ability of rabbitbrush to trap and retain moisture from snow, and differences between rabbitbrush and crested wheatgrass in root morphology and timing of growth. Rubber rabbitbrush does not produce lateral roots, and its peak growth period is relatively late in the growing season.

### **Control**

Because rubber rabbitbrush re-sprouts from basal buds, mechanical cultivation and fire typically increase stand density. Chemical control is fairly successful with applications of clopyralid, dicamba, 2-4-D ester (Whisenant 1988) and metsulfuron (Enloe et al. 2009) in mid to late spring when plants have obtained approximately 2 to 3 inches of new growth and soil moisture is still readily available.

Contact your local agricultural extension specialist or county weed specialist to determine what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Control measures appear in this document only to provide specific information. USDA NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

### **Pests and Potential Problems**

Some ecotypes of rubber rabbitbrush are infected by stem galls, which are caused by two species of tephritid flies (*Aciurina* species) (McArthur 1979). There are no reports of negative effects caused by the galls.

### **Environmental Concerns**

Although rubber rabbitbrush may appear to dominate a plant community soon after disturbance, it is not overly competitive (McArthur 1979) and is eventually replaced with other vegetation as the community matures (Tirmenstein 1999; Ogle et al. 2009).

### **Seeds and Plant Production**

Rubber rabbitbrush is fast growing, reaching maturity in 2 to 4 years, and has a lifespan of 5 to 20 years (McArthur and Taylor 2004). Plants begin producing seeds when they are 2 or more years old (Deitschman et al. 1974). Seeds can be harvested in fall or early winter by shaking or stripping the heads from the branches. Processing in a hammer mill followed by a screen fanning mill effectively cleans the seeds prior to sowing.

There are about 693,000 rubber rabbitbrush seeds per pound (Deitschman et al. 1974). The seed is non-dormant, although stratification speeds germination (Dietschman et al. 1974) and lowers the temperature at which seeds

germinate (Meyer et al. 1989). Seed germination is not dependent on light (Belcher 1985). Germination is relatively high (65 percent) and remains high for up to 3 years in storage with moderate temperature and relative humidity conditions (Stevens et al. 1981).

McArthur et al. (1987) found drastic differences in germination rate within and among populations of rubber rabbitbrush. When tested at 37.4 degrees Fahrenheit, collections from hot desert environments germinated the fastest, those from montane and high-latitude environments germinated the slowest, and collections from mid-elevation environments had variable germination rates. Rate of germination is a result of genetic and environmental factors, and is timed to maximize the probability of seedling survival in each habitat (Meyer et al. 1989).

Container production in a peat-like media with low nutrition results in a well-rooted seedling in a 40-cubic-inch container in 1 growing season, and a 1 to 2 gallon container in two growing seasons. Given ideal plant nutrition and an extended growing season, rabbitbrush can fill a 1 to 2 gallon container in a single growing season. Rubber rabbitbrush can withstand heavy and repeated pruning during production.

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

None

Contact your local Natural Resources Conservation Service office for more information. Look in the phone book under United States Government. The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

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#### Prepared By

Pamela L. Scheinost, USDA NRCS Plant Materials Center, Pullman, Washington  
 Joe Scianna, USDA NRCS Plant Materials Center, Bridger, Montana  
 Daniel G. Ogle, USDA NRCS State Office, Boise, Idaho

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