



# BRITTLEBUSH

## *Encelia farinosa* A. Gray ex Torr.

Plant Symbol = ENFA

*Common names:* goldenhills, white brittlebush, incienso, flor de rocío

*Scientific Names:* *Encelia farinosa* A. Gray ex Torr. var. *farinose*; var. *phenicodonta* (S.F. Blake) I.M. Johnst.; var. *radians* Brandegees ex S.F. Blake

### Description

*General:* Brittlebush is a native perennial shrub. It is most commonly 2 to 3 ft (60 to 91 cm) in height, and 2 to 4 ft (60 to 121 cm) in width, although it can grow as wide and as tall as 5 ft (152 cm). It is round domed in shape with many densely clustered leaves on branched stems that contain yellow ray flowers. The leaves are broad, ovate to lanceolate in shape, 0.7 to 2 in (2 to 5 cm) long, 0.6 to 1 in (1.5 to 2.5 cm) wide, alternate, and clustered at the stem tip (Keil & Clark, 2023). The leaf petioles are 0.4 to 0.8 in (1 to 2 cm) long (Hickman, 1993). After seasonal rains, the leaves are blue-ish green in color, and a withered white-ish in dry months (Shreve, 1964; Bertrand, 2003; Sacamano & Jones, 1975). The inflorescence consists of a loose panicle of daisy-like flowers raised above the leaf foliage on long and rising flower stalks (Benson & Darrow, 1981; Mielke, 1993) with approximately 10 to 20 bright yellow ray florets, 1 to 1.5 in (2.5 to 4 cm) in diameter (Irish, 2006). The petals are 0.4 to 0.8 in (1 to 2 cm) in diameter with yellow to brown disc florets 2 in (5 cm) in diameter (Benson & Darrow, 1981; Keil & Clark 2023; Kyhos, 1971). Involucres are hemispheric and 0.2 to 0.4 in (4 to 10 mm) wide, present in series of 20 to 30 per flower head (Benson & Darrow, 1981). The achenes are 0.1 to 0.2 in (0.3 to 0.6 cm) wide, wedged shaped, with long haired edges, and glabrous or short-hairy faces (Rodgers & Miller, 2008; Hickman, 1993).



Figure 1. Brittlebush (Photo by Jim Thomas, USDA NRCS Tucson Plant Materials Center).

Brittlebush may bloom from January to June and August to September (Kiel & Clark, 2023), as flowers and leaves form when water conditions are favorable (Rodgers & Miller, 2008). The genus *Encelia* is named for the German naturalist, Christop Entzelt, and the species *farinosa* translates to powdery or mealy, referring to the appearance of brittlebush leaves (Benson & Darrow, 1981; Clark, 1848; Kearny & Peebles, 1969). The plant is suffrutescent, often emitting a pungent odor (Benson & Darrow, 1981). The common name “incienso” stems from burning the wood resin as incense at churches in parts of Mexico (Benson & Darrow, 1981; Curtin, 1949). Brittlebush is easily confused with two similar species, California brittlebush (*E. californica*) and Virgin River brittlebush (*E. virginensis*), which have unbranched flower stalks that terminate in a single flower head, in contrast to the multi-branched flowerheads of brittlebush (Spellenberg, 1979; Turner et al., 2005).

*Distribution:* Brittlebush is found throughout the southwestern United States, and in northwestern Mexico in the Sonoran, Chihuahuan, and Sonoran deserts. It is primarily and commonly present in Arizona, southern California, southern Nevada, northwestern New Mexico, and southwestern Utah (Benson & Darrow, 1981; Clark, 1848). It is also found as an introduced and naturalized species in dry, low-level elevations of Maui, Hawaii (Lady Bird Johnson Center, 2022; World Flora Online, 2025). As a result of roadside and disturbed site restoration efforts, brittlebush has expanded its range in California, Arizona, and Nevada (Koehler & Montalvo, 2004). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

**Habitat:** Brittlebush is found in disturbed areas with shallow, rocky, and poorly developed soils, such as washes and arroyos (Spellenberg, 1979; Brahmsteadt, 2024). It grows best in warm, dry climates, and can be found along stony desert hillsides, upper bajadas, rocky slopes and alluvial fans, particularly on south facing sides (Padgett et al., 1999; Clark, 1848). It can be found at altitudes from 0 to 4,920 ft (0 to 1,500 m) (Sawyer et al., 2009; Turner et al., 2005). Brittlebush also occurs in semi-desert grasslands and oak woodlands, and it is dominant on rocky slopes in its northern range (Shreve, 1964).

### Adaptation

Brittlebush is drought tolerant and adapted to varying temperature and rainfall conditions (Sandquist, 1996). During periods of extreme drought, it will drop all its leaves and become dormant (Padgett et al., 1999; Turner et al., 2005). The mortality rate for young brittlebush plants is high, but some populations can live up to 30 years (Brahmsteadt, 2024; Shreve & Hinkley, 1937). Brittlebush is well adapted to disturbed sites, with a high number of seedlings easily recolonizing after fires (Brown, 1986). Brittlebush is frequently found on sandy and coarse loamy soils in leveled plains (Shreve, 1964), and it grows in coarse textured soils with low infiltration rates and rocky shallow soils (Smith et al., 1997). It often grows in soils of granitic and volcanic origins (Brown, 1994; Parker, 1991). It is flood intolerant due to its brittle stems and grows in arid and semi-arid climates (Smith et al., 1997).

### Uses

Brittlebush is planted for a wide variety of uses to include pollinator habitat establishment, wildlife cover, erosion control, disturbed area restoration, and rangeland rehabilitation. It is used by many animals and insects as food, while also being utilized for habitat restoration and in urban landscapes. Brittlebush is a browse species for desert mule deer (*Odocoileus hemionus*) and desert bighorn sheep (*Ovis canadensis nelsoni*), which feed on its leaves and flower-heads (Albert & Krausman, 1993; Dayton, 1931). Brittlebush provides cover for the Mojave desert tortoise (*Gopherus agassizii*) and the California gnatcatcher (*Poliophtila californica*), both federally threatened species (Shryock, 2015; Brahmsteadt, 2024). Several species of breeding birds, including hummingbirds and quails, use brittlebush for cover and feed on its nectar and seeds (Alban, 2025). Its nectar attracts bees and butterflies, and the Encelia leaf beetle (*Trirhabda geminata* Horn) (Starr, 2009; Bethke & Redak, 1996). Brittlebush is a host plant to the painted lady butterfly (*Vanessa cardui*) larvae during spring months (Irish, 2006). Brittlebush is used to rehabilitate disturbed areas, critical area stabilization, and low maintenance landscapes. It is also used to minimize erosion and sediment damage near highways in Arizona and California (Brahmsteadt, 2024). Brittlebush is regularly used as a flowering accent plant alongside roads, medians, gardens, and planters (Perry, 1992).

### Ethnobotany

Brittlebush has been used by Native American tribes for both medicinal and technical purposes. The Cahuilla Tribe used it as a toothache remedy by decocting the stems, leaves, and blossoms, and for chest pain by heating the gum (Rodgers & Miller, 2008; Bean & Saubel, 1972). The Papago Tribe used the resin as a chewing gum, a waterproofing agent, and an adhesive to fasten arrow points onto the ends of the arrow shaft (Edward & Underhill, 1935). The Pima Tribe had similar uses for the plant such as creating a poultice to apply as an analgesic, as chewing gum, and for varnish applications, while also using the resinous branches to quickly start fires (Curtin, 1949).



Figure 2. Brittlebush flowers (Photo by Jim Thomas, USDA NRCS Tucson Plant Materials Center).

## Status

*Threatened or Endangered:* No.

*Wetland Indicator:* No.

*Weedy or Invasive:* No.

Please consult the PLANTS Web site (<http://plants.usda.gov/>) and your state's Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

## Planting Guidelines

The recommended seeding rate for brittlebush is 1 to 2 lb of pure live seed (PLS) per acre (Great Basin Seed, 2025). There are approximately 375,000 seeds per lb (Stevenson Intermountain Seed, 2024). Brittlebush is easily transplanted or can be established by direct seeding (Perry, 1992). Care is to be taken when transplanting seedlings, as branches may break off easily (Padgett et al., 1999). Seeds can remain dormant in drier conditions (Bewley & Black, 1994). Germination rates can be increased by soaking the seeds in warm water for 30 minutes, followed by a 30-minute soak in gibberellic acid, sowing the seeds into pre-soaked vermiculite, and keeping the soil moist (Padgett et al., 1999; Montalvo et al., 2010). Plant in well-draining sandy or rocky soil with a pH level between 6.0 to 8.0. Successful out planting has been done in 30 in (76 cm) tubes with seedlings requiring a one to two week hardening off period (CALR, 1993). Plants can be spaced 2 to 3 ft (0.6 to 0.9 m) apart, while ensuring that the roots are level with the soil surface (Rankel, 2024; Perry, 1992).

## Management

Although drought tolerant, brittlebush may need water after establishment, and periodic deep watering to sustain healthy growth (Keator, 1994; Perry, 1992). Brittlebush dormancy can be suppressed, and the plant will continue to grow in late spring and throughout summer if water is supplied (Starr, 2009). However, brittlebush should not be overwatered to prevent root rot (Keator, 1994; Perry, 1992). Pruning can be done after flowering in May and removal of old flower heads in the fall to stimulate new growth (Walters & Backhaus, 1992). Brittlebush has been known to hybridize with other species of *Encelia*, including California brittlebush (*E. californica*) and button brittlebush (*E. frutescens*) (Ehleringer, 1988; Singhal et al., 2021; California Native Plant Society, 2025). When planting in open areas, care should be taken to preserve its genetic traits since it has the potential to hybridize, and seeds can readily spread by wind (California Native Plant Society, 2025).

## Pests and Potential Problems

Brittlebush is host to the larvae and adults of the Encelia leaf beetle (*Trirhabda geminata*), which selectively feeds on its leaves (Wisdom, 1985). A monophagous fruit fly (*Neaspilota footei*) develops in the flower heads of brittlebush, feeding on the corollas, ovules and achenes throughout its life stages (Goeden et al., 2001). Nursery plants may be subject to aphid predation during the spring (Padgett et al., 1999), and these can be removed with strong jets of water or by hand (Irish, 2006).

## Environmental Concerns

None known.

## Seeds and Plant Production

Brittlebush should be planted on a weed free seedbed up to ¼ in (0.63 cm) deep during early spring or fall (Great Basin Seed, 2025; Stevenson Intermountain Seed, 2024). Brittlebush seeds germinate in 7 to 10 days when provided sufficient water. Seeds can remain viable in storage for up to a year or longer (Bowers, 1994). Brittlebush seeds stored between 41°F to 50°F (5°C to 10°C) show a greater germination rate than those stored at room temperature (Padgett et al., 1999). Brittlebush can be easily propagated from stem cuttings (Padgett et al., 1999). Seeds fall easily from their heads and can be air-separated or screened to remove chaff from achenes (Montalvo et al., 2010). Mechanical seed collection can be completed with a seed stripper or combine. Harvested seed can be cleaned by processing with a brush machine or hammer mill and air screening equipment.

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

Brittlebush is easily grown from seed, and seed is readily available from commercial sources (USDA, 2024; Lady Bird Johnson Wildflower Center, 2022).



Figure 3. Five feet tall brittlebush (Photo by Jim Thomas, USDA NRCS Tucson Plant Materials Center).



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