



Natural Heritage & Endangered Species Program

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Bushy Rockrose

Crocanthemum dumosum Bicknell

State Status: Special Concern
Federal Status: None

Description: Bushy Rockrose is a globally rare, bright yellow perennial wildflower of coastal herbaceous grasslands and heathlands. This species is bushy, with stiff stems and many divergent, reddish branches. The buttery-yellow, five-lobed flowers bloom in full sun and are short-lived, casting their petals by the next day. Deep green vegetation appears dusky due to pubescence on the stems, leaves, and sepals. Leaves are darker above and pale below.

Aids to identification: Bushy Rockrose can grow to 25 cm (~10 in.) and appears sprawling. Leaves are elliptical and small (8–15 mm), alternate, and often crowded on the branchlets. The leaves are covered in an intermixed dense pubescence of stellate hairs and longer simple hairs (up to 1 mm); the pedicels and sepals may also have reddish glandular hairs. Bushy Rockrose produces two kinds of flowers; the early open (i.e., chasmogamous) flowers have showy petals and are insect-pollinated, whereas the later, closed flowers (i.e., cleistogamous) lack petals and are self-pollinated. The earlier, open flowers are approximately 2.5 cm (~1 in.) and are born singly (rarely paired) at the tip of the stem and main branches. Prior to flowering, the buds appear reddish. The later, closed flowers are solitary occurring at the branch tips or the forks of leafy branchlets. Seeds are nearly as long as they are thick and are produced in capsules.

Similar species: This species is notoriously difficult to distinguish from the more common Frostweed (*C. canadense*) because it shares many characteristics. These species must be carefully examined to differentiate them. Phenologically, they differ in that Bushy Rockrose produces open flowers earlier in the season than Frostweed.



Bushy Rockrose, showing the sprawling habitat. Flower photo: H. Woolsey. Capsules and leaves: B. Sorrie. Both NHESP.

Morphologically, the more common species is overall more upright with fewer branches, and has less dense leaf pubescence on the upper surface than the rare species. See the key differentiating characters in the table below. Low Frostweed (*C. propinquum*) and Bicknell's Frostweed (*C. bicknellii*) differ from both of the above species in that they produce a greater number of open flowers in corymbs (not singly), lack glandular hairs on the sepals and petioles, and lack simple hairs on the upper leaf surfaces.

(From Haines, forthcoming, and Daoud and Wilbur, 1965)

Characters	Bushy Rockrose	Frostweed
Habit	Branched, and lower	Upright, fewer branched
Cleistogamous capsules	3–4.5 mm; 8–14/capsule	2–3mm; 5–10/capsule
Seeds	with broad papillae	with elongate papillae
Adaxial leaf surface	Simple and stellate hairs, the latter very dense, obscuring leaf surface	Simple and stellate hairs, the latter more sparse

Habitat in Massachusetts: In Massachusetts, all occurrences are associated with the coastal plain. Bushy Rockrose inhabits open sandy soils of coastal sandplains and heathlands. It is sometimes found along the frequently mowed edges of golf courses along the coast. This species prefers dry, sandy, acidic soils and open sun. Associated species of these habitats include Little Bluestem grass (*Schizachyrium scoparium*), Sandplain Blue-eyed Grass (*Sisyrinchium fuscatum*; Special Concern), New England Blazing Star (*Liatris scariosa* var. *novae-angliae*; Special Concern), Scrub Oak (*Quercus ilicifolia*), Black Huckleberry (*Gaylussacia baccata*), Seaside Goldenrod (*Solidago sempervirens*), Bushy Aster (*Symphotrichum dumosum*), Beach Pinweed (*Lechea maritima*), Bearberry (*Arctostaphylos uva-ursi*), and Low Bush Blueberry (*Vaccinium angustifolium*).

Range: Bushy Rockrose is endemic to the coastal plain of the northeastern United States. This species is currently known from Massachusetts, Rhode Island, and New York; it is possibly extirpated from Connecticut. Bushy Rockrose is a species of conservation interest throughout its range.

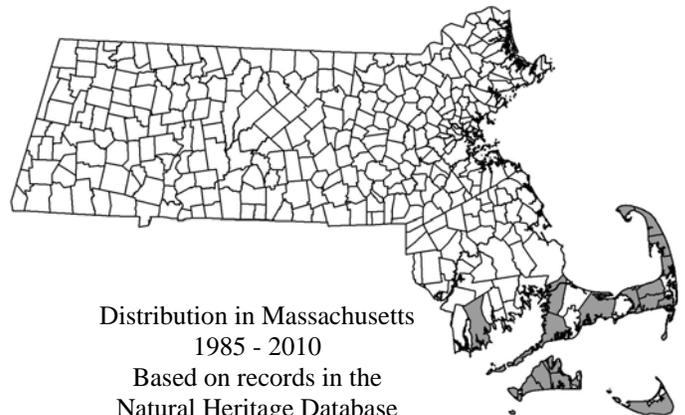
Threats: Bushy Rockrose thrives in early succession habitats and is frequently found in areas of mild disturbance. Threats to this species include habitat loss due to development and fire exclusion, which can lead to competition from invasive and aggressive native species.

Chasmogamous flowers

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Cleistogamous flowers

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form as these donations comprise a significant portion of our operating budget.

Population status in Massachusetts:

Massachusetts has the majority of the world's population of Bushy Rockrose. This species is listed under the Massachusetts Endangered Species Act as a species of Special Concern. All listed species are protected from killing, collecting, possessing, or sale, and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. It is currently known from Nantucket, Barnstable, Dukes, and Bristol counties and is historically known from Plymouth County.

Management recommendations: Some research has shown that reproduction follows periods of disturbance. Fire has been shown to encourage regeneration and to enhance adult growth of this species. Burning, mowing, or soil scarification are recommended to retard succession and competition. The removal of windbreaks has also been shown to improve Bushy Rockrose habitat. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act and should be planned in close coordination with the Massachusetts Natural Heritage Endangered Species Program.

For More Information See:

Daoud, H.S. and R.L. Wilbur. 1965. A revision of the North American species of *Helianthemum* (Cistaceae). *Rhodora* 67: 63–312.

Dunwiddie, P.W. 1990. Rare plants in coastal heathlands: observations on *Corema conradii* (Empetraceae) and *Helianthemum dumosum* (Cistaceae). *Rhodora* 92: 22–26.

Fernald, M.L. 1917. *Helianthemum dumosum* on the mainland of New England. *Rhodora* 19: 58–60.

Haines, A. *Flora Novae-Angliae*. In prep.