



# Small-leaf globemallow

## *Sphaeralcea parvifolia* A. Nelson

Plant Symbol=SPPA2

**Common Names:** small-leaved globemallow, smallflower globemallow, Nelsons Globemallow

**Scientific Names:** *Sphaeralcea parvifolia* A. Nelson

### Description

**General:** Mallow Family (Malvaceae). Small-leaf globemallow is a native, perennial forb with stems up to 1 m in height. Leaves are grayish- or whitish-pubescent and up to 40 mm long. The leaves are broadly deltoid to almost orbicular in outline with mostly cordate bases and obtuse apices and 5 main veins diverge from the base. The leaves are usually rounded (rarely cleft) with margins regularly crenate to crenulate. The inflorescence is a many-flowered narrow thyrses (a compact panicle usually formed by cymes with lateral axes) with pedicels usually shorter than the calyx. The calyces are 4 to 8 mm long, densely pubescent, with deltoid or ovate-lanceolate lobes. The petals are orange-red, 8 to 18 mm long. The staminal column is glabrous. The carpels number 9 to 12 are shallowly notched with the dehiscent portion erect and the indehiscent portion occupying about a fourth of the carpel wall which is finely reticulate. Usually 2 pubescent seeds are found per carpel. (Martin and Hutchins 1980). Flowers may bloom from April to November.



Al Schneider, hosted by the USDA-NRCS Plants Database

*S. parvifolia* has been classified as the southern and lower elevation counterpart to *S. munroana* (Utah State University Intermountain Herbarium). Morphological adaptation to different environmental conditions may account for leaf morphological variation among populations of *S. parvifolia* and *S. munroana*. (Sriladda et al., 2012)

**Distribution:** Small-leaf globemallow is primarily found in northern Arizona, western Colorado, northwestern New Mexico, southern Utah, east-central Nevada, and Inyo Co., California (Wildflowersearch.org). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

**Habitat:** Dry mesas and slopes at 1200-2100 m, desert shrub and pinyon-juniper communities, interior chaparral, semi-desert grasslands, disturbed sites, washes, and roadsides. Plants are commonly found among greasewood, blackbrush, sagebrush and juniper communities at 750-2450 m (Arizona Cooperative Extension 2017).

### Adaptation

Small-leaf globemallow is adapted to sandy, gravelly and rocky soils in desert and disturbed habitats (Wildflowersearch.org).

### Uses

This species of globemallow is an excellent colonizer of disturbed sites and useful for erosion control. Globemallow species are recommended for low-water use landscapes due to their drought tolerance and long bloom period (Sterman et al., 2010). Globemallows provide nectar and pollen to native bees in particular the Globe Mallow Bee (*Diadasia diminuta*). It is palatable to livestock and wildlife, and favored forage of sheep, goats, and pronghorn antelope (Rumbaugh et al., 1993).

### Ethnobotany

Globemallow ethnobotanical uses by Native Americans include constituents of house paint and flooring. Uses also include ceremonial and medicinal to treat infections and inflammation. (Dunmire and Tierney, 1995; Native American Ethnobotany Database 2011).

## Status

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, state natural resource, or state agriculture department regarding its status and use.

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).

## Establishment

Small-leaf globemallow can be established by seed or seedlings. The seed has an impermeable seed coat and should be scarified mechanically or chemically prior to sowing for optimal germination. Direct drilling at a rate of 20 to 50 pure live seeds per linear foot row at a depth of 0.4 to 0.6 cm with a row spacing of 70 to 90 cm is recommended for species of *Sphaeralcea* (Stevens et al., 1996). When planting in a mixture, the seeding rate should be adjusted according to the total percentage desired in the mixture. Supplemental irrigation and weed control may be necessary for stand establishment. Contact your local agricultural extension specialist or county weed specialist to determine the best control methods of invasive plants.

## Management

Where the globe mallow bee (*Diadasia diminuta*) is present, it is a very effective globemallow pollinator. *Diadasia* does eventually colonize and multiply in fields of globemallow (J.H. Cane, personal communication May, 2018). To enhance ground-nesting bee habitat of *Diadasia* do not cultivate around or within the planting during bloom (Tepidino 2010). The Los Lunas Plant Materials Center (LLPMC) established a .56 acre seed production field in 2012 using greenhouse grown seedlings. Prior to transplanting, the field was laser leveled to facilitate flood irrigation. The rows were deep tilled to 18-inches with a straight shank sub-soiler and fertilizer applied in row at a rate determined by a soil analysis report. Maintenance of the field included hand hoeing along with mechanical cultivation for weed control. Supplemental irrigation was provided weekly from August through September followed by bi-weekly irrigation through November to establish a dense stand for optimal seed production (Dreesen 2016).

## Pests and Potential Problems

The globemallow leaf beetle (*Calligrapha serpentina*) has been known to consume the leaves of species in the mallow family. Globemallow leaf beetles have been observed throughout the southwest and Mexico. Eggs are laid on the bottoms of leaves. Larvae are black, dull and hairy. After pupating the adults are red color with black lines and spots. Adults as they age, change colors from red to orange and yellow and finally to bright green (InsectIdentification.org).

## Environmental Concerns

None.

## Control

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method.

## Seeds and Plant Production

The LLPMC harvested the seed with a forage harvester. The green material was spread on a tarp to dry. Once dried, the material was processed through a hammer mill using a screen size of 1/4 inch at a speed dial of 8 to dislodge the seed from the carpels and to reduce the volume of plant mass. The resulting material was then processed using a 4 screen fanning mill using the following screen sizes: 17, 12, 1/17, and 1/25 to achieve a quantity of pure live seed.

Genera of *Sphaeralcea* have an impermeable seed coat that necessitates a seed treatment prior to sowing. A greater uniformity of germination may be achieved following seed scarification (Kildisheva et al., 2013). The LLPMC scarified small-leaf globemallow using a MAT-OSU pneumatic scarifier (Seedburo, Des Plaines, IL) for 60 seconds at 20 psi. The scarified seed was sown in plug trays with approximately 0.4 tsp. of seed per tray mixed with 4 tsp. of grit (0.8-2 mm) for each tray. The mixture was applied through a soil sieve to evenly disperse the seed over each tray. The moistened trays were put in clear plastic bags and placed into cold stratification at 4° C for approximately 6 weeks prior to placement in a greenhouse. The greenhouse had a night temperature set-point of 13° C and a day set-point of 21° C. After the seedlings had established sufficient root masses, they were transferred to a shade house to harden-off prior to transplanting to the field.

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

No known cultivars of small-leaf globemallow are currently in production.

### **Literature Cited**

Arizona Cooperative Extension. 2017.

<https://cals.arizona.edu/yavapaiplants/SpeciesDetailForb.php?genus=Sphaeralcea&species=parvifolia>. Accessed 9 April 2018.

Dreesen, D. 2016. *Bureau of Land Management "Seeds of Success" Final Study Report*. Los Lunas, New Mexico.

Dunmire, W., G. Tierney. 1995. *Wild Plants of Pueblo Province: Exploring Ancient and Enduring Uses*. Santa Fe, NM: Museum of New Mexico Press.

InsectIdentification.org

<https://www.insectidentification.org/insect-description.asp?identification=Globemallow-Leaf-Beetle>. Accessed 7 May 2018.

Kildisheva, O.A., R.K. Dumroese, A.S. Davis. 2013. Boiled, tumbled, burned, and heated: seed scarification techniques for Munro's globemallow appropriate for large-scale application. *Native Plants Journal* 14(1):42-47.

Martin, W.C., and C.R. Hutchins. 1980. *A flora of New Mexico*. Strauss & Cramer GmbH, 6945 Hirschberg. ISBN 3-7682-1263-7.

Native American Ethnobotany Database. 2011. <http://naeb.brit.org/uses/species/3780/>. Accessed 22 March 2018. University of Michigan, Dearborn, MI.

Rumbaugh, M.D. and B.M. Pendery. 1993. Utilization of Globemallow (*Sphaeralcea*) taxa by sheep. *J. of Range Mgmt.* 46:103-109.

Sriladda, C., H.A. Dratsch S.R. Larson, and R.K. Kjelgren. 2012. Morphological and genetic variation among four high desert *Sphaeralcea* species. *HortScience* 47(6): 715-720.

Serman, N., M. Irish, J. Phillips, and J. Lamp'l. 2010. *Water-Wise Plant for the Southwest*. Cool Springs Press, Brentwood, TN.

Stevens, R., K. R. Jorgensen, S. A. Young, S. B. Monsen. 1996. *Forb and Shrub Seed Production Guide for Utah*. December 1996, AG 501, 1-1-1996. [https://digitalcommons.usu.edu/extension\\_histall/59/](https://digitalcommons.usu.edu/extension_histall/59/). Accessed 10 April 2018.

Tepidino, V. 2010. Glove mallow bee (*Diadasia diminuta*) [https://www.fs.fed.us/wildflowers/pollinators/pollinator-of-the-month/globe\\_mallow\\_bee.shtml](https://www.fs.fed.us/wildflowers/pollinators/pollinator-of-the-month/globe_mallow_bee.shtml). Accessed 7 May 2018.

Wildflowersearch.org

<http://wildflowersearch.org/search?oldstate=gloc%3Az%3Bbloom%3AIgnore%3Bname%3ASphaeralcea+parvifolia>.

Accessed 2 May 2018.

### **Citation**

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