

# Leucophyllums for Southern Arizona Landscapes

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## Introduction

Over the past six years, several new *Leucophyllum* species and cultivars have been introduced into the horticulture trade. To some, one *Leucophyllum* looks like any other, while in reality there are some key differences about these new ones that set them apart from *Leucophyllum frutescens*. These newly available species and cultivars deserve closer inspection.

## Generic Description

*Leucophyllum* is a New World genus that has always been considered as a member of the family Scrophulariaceae. However, its relative position has been a topic of debate among botanists. Some have even suggested that it belongs in the family Myoporaceae (Henrickson & Flyr, 1985). However, that is not the subject of this paper so we will leave the controversy for others to settle.

According to Henrickson & Flyr (1985), the genus consists of twelve species occurring in arid parts of Mexico, southern Texas, and one locality in extreme southern New Mexico. All species are woody shrubs growing to 0.5-3 meters (1.6-10 feet) high and nearly as wide. Stems may be upright or nearly horizontal. Flowers for all species occur singly in upper leaf axils. In nature, the best floral displays usually occur after a summer rain storm or during periods of high humidity. This aspect of flowering leads to some of the common names such as Rain Sage and Barometer Plant. Other common names include the Spanish name Cenizo which means ashlike, a reference to the pale leaves, and Texas Ranger. The calyces are all five lobed. Individual corollas are five lobed and slightly irregular. Flower color varies from lavender, pinkish, rose, or violet; rarely it is white.

## Literature Search

Of the twelve naturally occurring species, seven are currently cultivated. The first to be cultivated was *Leucophyllum frutescens*, having been introduced into Arizona horticulture at least by the early 1940's. It has become the standard to which other desert plants for landscapes are compared. *L. frutescens* is the only species listed by Williamson (1983) and the editors of *Sunset in the Western Garden Book*, while Bailey (1976) and the staff of the L.H. Bailey Hortorium listed *L. frutescens* and *L. minus*. Wasowski and Wasowski (1988) treat *L. candidum* and *L. frutescens*. Duffield and Jones (1992) treat *L. candidum*, *L. frutescens*, *L. laevigatum* and *L. zygophyllum* in their book geared mainly for southwestern horticulture. The latter two sources treat species that have been introduced in the past ten years. These introductions are a direct result of the interest that has been fueled by several plant enthusiasts. Rodney Engard, former director of the Tucson Botanical Garden, collected and introduced *L. laevigatum*. Warren Jones, professor emeritus of Landscape Architecture at The University of Arizona collected and tested *L. candidum* and *L. zygophyllum*. Benny Simpson, at the Texas Agricultural Experiment Station in Dallas, has been working with *Leucophyllum* since 1973, and has trademarked and released five with 3-4 others due out over the next five years. The author and Ron Gass, of Mountain States Nursery, have collected and tested *L. pruinosum* which is now being released to the nursery industry, and *L. revolutum* which is undergoing further evaluation for its potential as a landscape plant in the arid southwest. The heightened awareness of the variety that the genus *Leucophyllum* has to offer has led to the compilation put forth here.

## Acknowledgments

I would like to thank Warren Jones for his willingness to share his knowledge about new desert landscape plants. Also, Ron Gass for the many enjoyable times shared collecting new plants; and for sharing his enthusiasm and extensive knowledge about all aspects of plants. Two more plant enthusiasts, Rodney Engard and Benny Simpson, have been vital to furthering the cultivation of *Leucophyllum*. Many thanks go out to Al H. Guhl for the use of his magnificent pictures.

## Abstract

*Leucophyllum* is a member of the family Scrophulariaceae and includes 12 species which occur in extreme southern New Mexico, Texas, and Mexico. *Leucophyllum frutescens* was in cultivation in southern Arizona in the early 1940's and only recently have new species been cultivated. Seven species and their cultivars are discussed with specific reference to descriptions, culture, identification, and distribution. Each species is distinct and all are highly recommended for landscape use.

### Cultivation

All currently cultivated species have several common characteristics and requirements. All species and cultivars are evergreen. Species from Texas and the Chihuahuan Desert Region are hardy as far north as zone 8 (USDA map) which can be found in *Desert Plants* 8(3). *The New Western Garden Book* indicates that *L. frutescens* can be grown in zones 7-24. According to Dr. Benny Simpson (personal communication) the Texas species (*L. candidum* and *L. frutescens*) are hardy to almost -18° C (0° F) when they are not watered, fertilized, or pampered. In other words, let them go dormant and do not encourage new growth during winter. The species that grow only in Mexico (*L. laevigatum*, *L. langmaniae*, *L. pruinosum*, *L. revolutum* and *L. zygophyllum*) are not as hardy as those that range into the United States. They all grow best when planted in full or reflected sun and a fast draining soil. All are drought tolerant once established. However, growth rate and flower production will increase if given several thorough waterings during the growing season. Do not overwater as plants may be susceptible to root rot in waterlogged soils.

Pruning techniques greatly influence flower production. Plants which are continually pruned into globes, boxes, or other topiary shapes, do not produce an abundance of flowers. Old, woody plants which are not actively growing do not produce a profusion of flowers either. To overcome both of these problems and increase flower production on plants, pruning techniques should be changed. It has been my experience that plants which are pruned severely in spring then allowed to grow naturally the rest of the year produce the best flower displays. Maximum sunlight and high humidity also are factors in triggering flower production.

### Species Accounts:

The following descriptions are for plants under cultivation. For an excellent detailed description of each species as it occurs in nature, see Henrickson & Flyr (1985).

#### *Leucophyllum candidum* I.M. Johnston Silver Leaf Sage

**Description:** In cultivation, plants are dense, rounded shrubs reaching 1-1.5 meters (3-5 feet) high and wide. The nearly pure white leaves are 6-16 mm long and 4-10 mm wide, and provide an excellent background for the profusion of light to dark violet flowers which measure 11-20 mm long and 8-16 mm across. Flowers will appear when the conditions are right from June through November with the best displays occurring in fall.

**Culture:** The species is evergreen and cold hardy to at least -15° C (5° F). Silver Leaf Sage is best planted in full or reflected sun and a well-drained soil. Growth rate is moderate to slow, dependent on growing conditions, reaching a size of one meter two or three years after planting. Once established, plants are virtually maintenance free. No pruning is required to maintain a dense rounded shape as this is the natural form. However, if plants become leggy from too much shade or water they can be cut back nearly to ground level.

**Identification:** This species can be distinguished from the others by the dense white pubescence which covers the leaves and young stems giving the plants a nearly pure white appearance.

**Distribution:** Silver Leaf Sage is native from Brewster County, Texas, south into western Coahuila, extreme eastern Chihuahua, northern Durango, and northern Zacatecas.

**Cultivars:** Currently there are four forms of Silver Leaf Sage being cultivated. The first two were collected in spring of 1985 near Panther Junction, Texas. These were grown and planted out in Tucson. One form, called "Violet Sunset" has larger, 26 mm wide (1 inch), light violet flowers, while the other, named "Royal Sunset" has 22 mm wide, dark violet flowers. *Leucophyllum candidum* "Silver Cloud" was introduced by the Texas Agricultural Experiment Station in Dallas in 1983. "Silver Cloud" was selected from plants grown from seed collected off a plant at the headquarters of the Big Bend National Park. "Silver Cloud" has smaller, 19 mm wide, dark violet flowers, and has a stiffer appearance than either "Violet Sunset" or "Royal Sunset". *Leucophyllum candidum* "Thunder Cloud" was introduced in 1985 by the Texas Agricultural Experiment Station. "Thunder Cloud" is more compact and much more floriferous than "Silver Cloud". Both "Silver Cloud" and "Thunder Cloud" are trademarked and need to carry the correct TAM-REP tags when sold.

#### *Leucophyllum frutescens* (Berlandier) I.M. Johnston Texas Ranger, Texas Sage, Cenizo

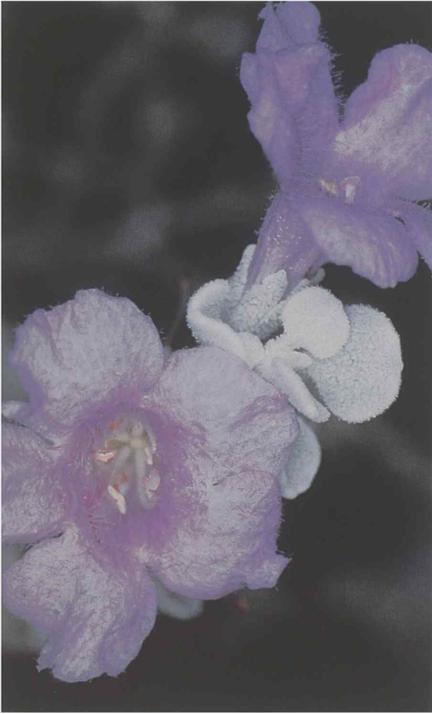
**Description:** Texas Ranger is a large, fast growing shrub reaching a size of up to 3 meters (10 feet) high and 2 meters (6.5 feet) wide. Leaves are bicolored, green or gray-green above and silvery gray beneath, and measure 10-35 mm long and 4-16 mm wide. The flowers measure up to 26 mm (1 inch), and range in color from rose-lavender, light violet, rose-pink to reddish-pink, or rarely white. Flowers will appear anytime from June through November with several good displays occurring in late summer and early fall.

**Culture:** Shrubs are evergreen and cold hardy to at least -12° C (10° F), with some leaves being shed in extreme cold. Of all the species cultivated, Texas Ranger is quite versatile, adapting equally as well when used as a clipped hedge, or as an informal specimen in a desert landscape. The species is quite tolerant of heat and drought. Texas Ranger should be used in full or reflected sun and a well-drained soil. Plants are drought tolerant once established, and should not be overwatered as they have been known to die out from excess water.

**Identification:** *Leucophyllum frutescens* is easily recognized by its bicolored leaves, the upper surface being more green than the lower surface, and by the large, bell-shaped flowers.

**Distribution:** The natural distribution of this species is extensive, ranging from southern and southwestern Texas south into Coahuila, Nuevo León, and Tamaulipas, Mexico.

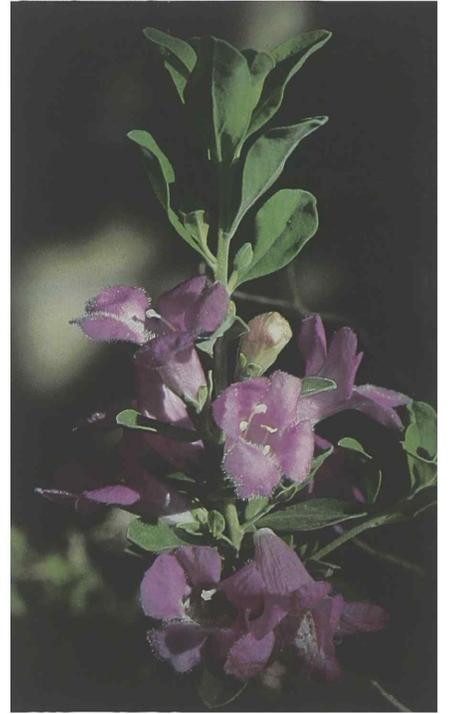
**Cultivars:** There are three cultivars of *Leucophyllum frutescens* in cultivation. *L. frutescens* cv. Compactum grows at a moderate-fast rate to 1.5 meters (5 feet) high and wide. Flowers are a rose-mauve color. Culture is the same as for typical *L. frutescens*. *L. frutescens* "Green Cloud" was released by the Texas Agricultural Experiment Station in 1983, and is readily distinguished by the dark green leaf color. *L. frutescens* "White Cloud" is another Texas Agricultural Experiment Station release from 1983. The history of "White Cloud" is interesting. Seedlings from a pink-flowered clone were grown alongside seedlings from a white-flowered clone. Twelve percent of the



*Leucophyllum candidum*



*Leucophyllum frutescens*  
"White Cloud"



*Leucophyllum frutescens*  
"Green Cloud"



*Leucophyllum laevigatum*



*Leucophyllum pruinosum*



*Leucophyllum revolutum*

progeny from the white-flowered selection had white flowers while six percent of the progeny from the pink-flowered selection had white flowers. However, "White Cloud" was selected from the pink strain because the flowers were larger and more numerous than any of those from the white strain.

"Green Cloud" and "White Cloud" should be planted in full or reflected sun and a well drained soil. Both cultivars will reach 2.5 meters (8 feet), however height can be controlled by shearing which should be done in spring prior to new growth. Both "Green Cloud" and "White Cloud" are trademarked and need to have their respective TAM-REP tags when sold.

*Leucophyllum laevigatum* Standley  
Chihuahuan Rain Sage

**Description:** Chihuahuan Rain Sage is a medium size shrub growing to 1.5 meters (5 feet) high and wide. Branches grow nearly horizontal or angled slightly up, giving the plant a low, wide, almost flat-topped appearance. Green leaves are up to 27 mm (1 inch) long and 10 mm wide. Flowers are medium sized, up to 20 mm wide, and the color of cultivated plants may be various shades of blue-lavender, lavender or mauve. Flowering season generally runs from June through November. Chihuahuan Rain Sage is capable of multiple flowering periods, and may be seen in nearly full flower on almost a weekly basis if the conditions are right.

**Culture:** Chihuahuan Rain Sage is evergreen and cold hardy to at least -15° C (5° F), although they will go partly deciduous in extreme cold. Plants are drought tolerant once established and have a moderate growth rate, responding some to more frequent irrigations. However, care should be taken not to overwater as plants will die of root rot. Use this *Leucophyllum* in full or reflected sun, a well-drained soil, and with minimal supplemental water. Under these conditions plants should require pruning once in the spring to maintain a dense form. Chihuahuan Rain Sage can be used in filtered light at the edges of tree canopies, but will become slightly leggy and require pruning once in early spring and once in mid-summer to keep plants dense. Once *Leucophyllum laevigatum* becomes established, it seems to be left alone by rabbits.

**Identification:** Chihuahuan Rain Sage may be distinguished by its green leaves, light lavender or mauve flower color, and its spreading shape.

**Distribution:** *Leucophyllum laevigatum* occurs on limestone soils and alluvium in the western and southern parts of the Chihuahuan Desert Region in the states of Chihuahua, Coahuila, Durango, Zacatecas, and San Luis Potosí.

**Cultivars:** Currently there are no named cultivars, however, *Leucophyllum laevigatum* var. *griseum* is being tested for its landscape potential. It differs from the typical form in its more gray-green colored leaves and more blue flowers. Flower production appears to be nearly nonstop in summer and fall. Currently, the release is projected for late 1993 or early 1994.

*Leucophyllum langmaniae* Flyr  
Canyon Rain Sage

**Description:** Canyon Rain Sage is a shrub which grows to 1-2.5 meters (3-8 feet) high, usually staying 1.5 meters (5 feet) high. The medium green leaves are up to 18 mm long and 10 mm wide.

Flowers are lavender-blue, up to 26 mm (1 inch) wide. Flowering season generally runs from June through November. Flower production is primarily of infrequent good flushes with sporadic flowering in between.

**Culture:** *Leucophyllum langmaniae* is hardy to -12° C (10° F). Plants are moderately drought tolerant once established. Canyon Rain Sage has a moderately fast growth rate responding some to supplemental summer water. Use this species in full sun or very light shade for best development. Plants require a very well drained soil with some organic matter. Prune plants once in spring and again once in summer if control of height is desired.

**Identification:** Canyon Rain Sage is similar to *L. laevigatum* but can be distinguished by having broader, slightly hairy leaves.

**Distribution:** *Leucophyllum langmaniae* is restricted to canyons in the Sierra Madre Oriental around Monterrey, Nuevo León. The population visited by the author and Ron Gass was not extensive, consisting of only a few plants. We collected small quantities of seed and cuttings from three plants which are being evaluated for their horticultural potential.

**Cultivars:** Currently there is one cultivar named "Rio Bravo" which has recently been introduced by Mountain States Nursery. The author and Ron Gass have evaluated three additional cultivars with one being selected for future release.

*Leucophyllum pruinatum* I.M. Johnston  
Fragrant Rain Sage

**Description:** This Rain Sage is a medium to large shrub growing to 1.5-2.5 meters (5-8 feet) high with a rounded form. Leaves are grayish-white and up to 15 mm long and wide. Plants have a moderate growth rate. Size and growth rate can be controlled by amount of water applied. Aromatic bluish-violet flowers are broadly funnelform and medium sized, measuring 11 mm long and 20 mm wide. Flowering season may begin as early as June and continue until November or even December.

**Culture:** The species is very drought tolerant once established and has a moderate-fast growth rate. Shrubs are cold hardy to -12° C (10° F). Plants seem to grow best when planted in full sun, a well drained soil, and given deep, infrequent waterings. Do not overwater as this species may die out from root rot. Shrubs will require occasional pruning to keep them dense and more compact.

**Identification:** *Leucophyllum pruinatum* could be confused with *L. candidum* and *L. frutescens*. It is distinguished from *L. candidum* by having larger, more greenish white leaves and darker stem tips. *L. pruinatum* can be distinguished from *L. frutescens* by the more rounded leaves and shorter, more purple flowers which do not extend much beyond the leaves.

**Distribution:** *Leucophyllum pruinatum* occurs in northeastern Mexico in the states of Nuevo León, Tamaulipas, and San Luis Potosí at elevations between 1000-1600 meters (3280-5250 feet).

**Cultivars:** There are two cultivars of *L. pruinatum* currently being grown. One, trademarked as "Sierra Bouquet" was collected in northeastern Mexico by Ron Gass and Rodney Engard. The other, trademarked as "Sierra Fresca" was col-

lected in northeastern Mexico by the author and Ron Gass. "Sierra Bouquet" has slightly larger flowers and a more upright growth form than "Sierra Fresca" which when young tends to have cascading stems. As the plants mature, central stems become stronger and more upright.

***Leucophyllum revolutum*** Rzedowski  
Curl Leaf Rain Sage

**Description:** An upright to rounded, tightly branched shrub growing to 0.5-2 meters (1.6-6.6 feet) high and wide. Leaves are relatively long and narrow, measuring 10-28 mm long and 2-4 mm wide, narrow at the base and becoming broader near the tip. They are oblanceolate in outline and distinctly bicolored, greenish above and whitish below, with margins that are rolled under mainly on the lower half. The violet or purple flowers appear sporadically in late summer and fall.

**Culture:** Curl Leaf Rain Sage is quite drought tolerant once established, surviving on infrequent (every 10-14 days) yet thorough waterings during the heat of summer. The infrequent irrigations lead to a denser and more compact plant than one which is watered frequently. This results in less pruning being required for the plant which was watered less frequently. The species is cold hardy to -12° C (10° F). Plants are slow growing, attaining a height of 75 cm (2.5 feet) in three growing seasons from a one gallon container. *Leucophyllum revolutum* should only be planted in full sun and a soil that is rocky or fast draining.

**Identification:** *Leucophyllum revolutum* is readily identified by the leaf shape and its rolled margin.

**Distribution:** *Leucophyllum revolutum* is known only from a few localities in northeastern Mexico.

**Cultivars:** One clone has been selected for its superior flowers and has been trademarked as "Sierra Magic".

***Leucophyllum zygophyllum*** I.M. Johnston  
Blue Ranger, Blue Rain Sage

**Description:** *Leucophyllum zygophyllum* is a large, rounded shrub growing to 1-2 meters (3-6.5 feet) high and wide. Dusty green, obovate or nearly orbicular leaves measure 10-20 mm long and 7-18 mm (0.6 inch) wide. Purple or violet flowers are relatively small, measuring 11-17 mm long, and 6-14 mm across. The flowering season extends from June to November with the best displays usually occurring in August, September, and October.

**Culture:** Blue Rain Sage is very drought tolerant once established. The moderately slow growth rate can be speeded up with regular, deep waterings. This species is cold hardy to at least -15 to -12° C (5-10° F). No pruning is required for shaping because of the naturally dense growth habit. Plants maintain a dense compact form when used in full sun.

**Identification:** Blue Ranger is the only species with opposite leaves. All other species have leaves that are alternate on the stem.

**Distribution:** *Leucophyllum zygophyllum* occurs in southern Nuevo León, southwestern Tamaulipas, and San Luis Potosí.

**Cultivars:** This *Leucophyllum* was originally collected in southern Nuevo León by Warren Jones and Bill Kinneson in the late 1970's. A second cultivar was collected in eastern Mexico and appears to have a superior flower production. This form, named "Rio Plata", will be released in late 1993 or early 1994.

**Literature Cited**

- Bailey, L.H., E.Z. Bailey and staff of the L.H. Bailey Hortorium. 1978. Hortus III. MacMillan Publishing Co., Inc. New York. 1290pp.
- Duffield, M.R., and W. Jones. 1993. Plants for Dry Climates. H.P. Books. Los Angeles. 192 pp.
- Henrickson, J. and L.D. Flyr. 1985. Systematics of *Leucophyllum* and *Eremogeton* (Scrophulariaceae). SIDA 11(2): 107-172.
- Wasowski, S. and A. Wasowski. 1988. Native Texas Plants Landscaping Region by Region. Texas Monthly Press. Austin, Texas. 406 pp.
- Williamson, J. (editor). 1988. Sunset Western Garden Book. Lane Publishing Co. Menlo Park. 592 pp.



*Calliandra californica*