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PHOTOGRAPHS

BP Bob Perrill
GJ Gene Joseph
GS Greg Starr
JM Judy Mielke
JNT John N. Trager
JRE Jane R. Evans
MAD Mark Dimmitt
ML Margaret Louderback
RJA Rita Jo Anthony
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SEEDLING DRAWINGS

JE Jane E. Evans

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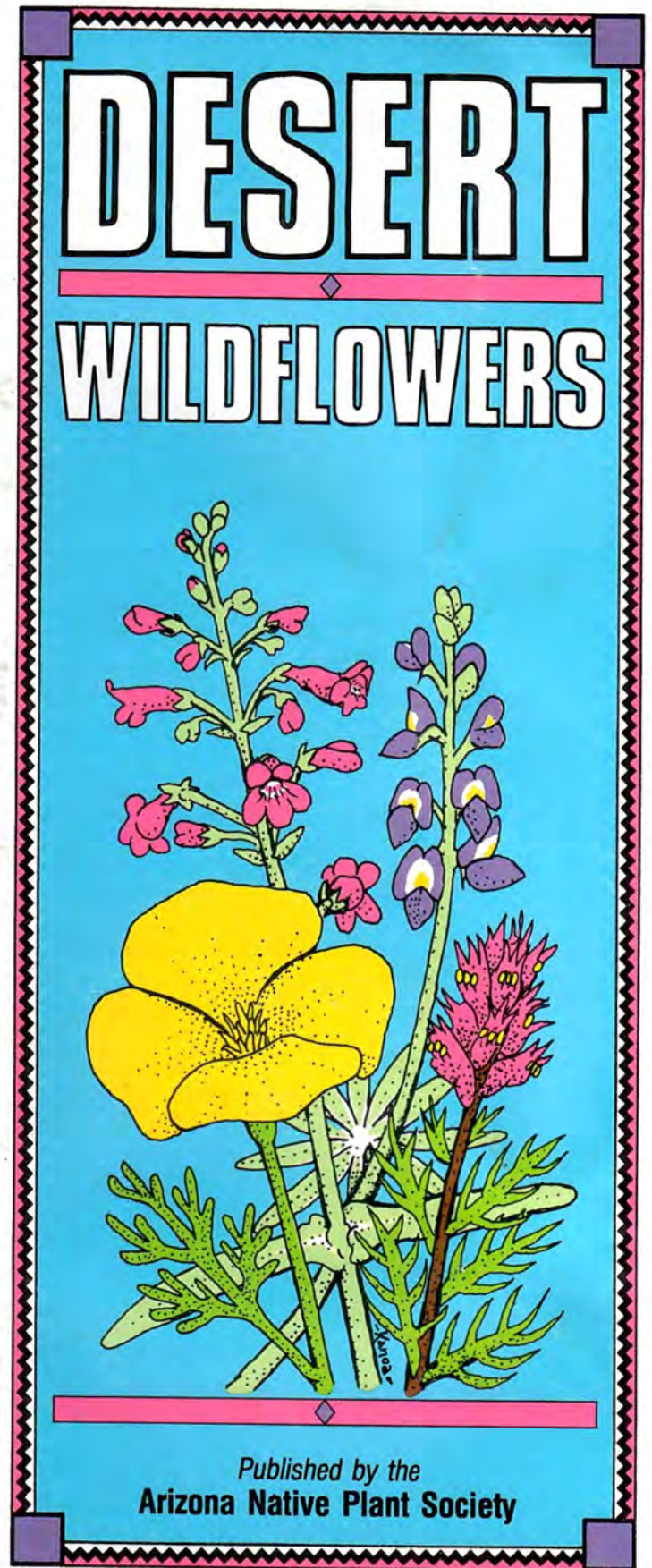


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INTRODUCTION

BP



Irresistible desert wildflowers are the subject of this fourth Arizona Native Plant Society (ANPS) publication on desert plants for urban landscapes. This booklet may be best used in conjunction with the previous ANPS publications to aid in a holistic approach to desert landscaping. Eighty-six species of wildflowers are

described in this booklet. The vast majority are native to the Sonoran Desert, plus a few exotic wildflowers that are low water users. The suggested non-native species are not invasive and, therefore, do not threaten the valuable integrity of our existing native biotic communities.

The current interest in native wildflowers originates from the practicality of using local desert-adapted plant materials and the threat of loss of our valuable desert plant communities. Our fragile vegetative heritage continues to be lost every day to intensified agriculture, grazing, new highway construction, urban development, other land uses associated with human activity, and general mismanagement of existing vegetative communities. Through continued efforts to use native plant species to restore priceless indigenous plant communities, this loss can be retarded and eventually reversed.

In addition to their elegant aesthetic, desert wildflowers are adapted to the local environment, an advantage they have over non-native species. Native desert species provide wildlife habitat, are more tolerant to the local climate extremes, are able to survive local soils, require less care and maintenance, use less water, less fertilizer, are more resistant to pests and disease, and will reseed themselves. The eighty-six species of wildflowers described in this booklet may be used by home gardeners and landscape professionals to enhance roadways, park systems, industrial developments, commercial properties, abandoned croplands, public gardens, and residential landscapes.

There are four sections to this booklet. The first section contains general information regarding criteria for species selection and general planting notes. The second section describes fifty-seven species of outstanding wildflowers. The third section describes twenty-nine other species of superior wildflowers. Little is known about the cultivation of the last group, and availability of propagation material is limited. The fourth section consists of a comparative table that summarizes the most important cultural information.

The wildflowers in this booklet are arranged in alphabetical order according to the scientific name. You may locate them by common name using the table of contents. All taxonomic nomenclature conforms to current usage.

The Arizona Native Plant Society does not suggest casual ingestion of plant materials, as many species may be toxic; the information presented in this booklet is intended for reference only. For additional information regarding the Arizona Native Plant Society and other titles in this series please contact the Arizona Native Plant Society, P.O. Box 41206, Tucson, Arizona 85717.

PLANT SELECTION

The primary criteria used to select the wildflowers in this booklet are as follows:

- 1. Low Water Use.** The wildflowers included in this booklet are low water use/drought tolerant species. Most of them are native to the Sonoran Desert. A few of them will require supplemental watering to survive in the low desert; these wildflowers are noted in the text.
- 2. Cold Hardiness/Heat Tolerance.** The majority of species in this booklet are well adapted to the climatic extremes of the Southwest deserts. The few non-native species that require protection from extremes are noted.
- 3. Showy Flowers.** Most of these wildflowers have attractive flowers that add seasonal color to the landscape. Several of the wildflowers are exceptional in other ways, such as interesting form, foliage, or fruit.
- 4. Dependability of Cultivation.** Most of the wildflowers in the first listing have been cultivated. Many in the second listing are uncommon and little is known regarding cultivation technique in the garden.
- 5. Availability.** Many of the species in the first listing are currently available through seed businesses (local and mail order) or from your local nurseries as container plants. Botanical institutions often carry hard-to-find species at annual sales. Many of the species in the second listing may be difficult to acquire. It is a goal of this publication to encourage both availability and use of some of these little known, but very desirable, native wildflowers.

There are many worthy desert wildflowers which do not appear in this booklet. Notable among the excluded species are mariposa lily, *Calochortus kennedyi*, one of the most photographed species in the desert; and African daisy, *Dimorphotheca* species, a favorite of home gardeners. The

former, difficult to cultivate even for experts, is considered too sensitive to promote as a cultivated species, and the latter is deemed overcultivated with an invasive tendency. There are many additional species of desert wildflowers that might have been included, were it not for a lack of time and space.

PLANTING NOTES

Seed of spring blooming wildflowers should be sown in fall to early winter. Summer/fall bloomers should be sown in spring or again just prior to monsoons. It is not recommended to sow seeds in the cold winter months as newly germinated seedlings may freeze, especially in the higher desert areas. It is also extremely difficult to establish seedlings during the hot, dry months prior to monsoons. The exact months for sowing will vary depending on location, elevation, and local climate conditions. For example, in the low deserts the sowing window is expanded due to milder temperatures in winter.

Wildflowers, with a minimal amount of care and maintenance, will provide years of gardening enjoyment. Despite the popular myth that just tossing the seed out on the ground will do, it is advisable to plant carefully for best results. Prepare a proper seed bed by loosening the soil surface by raking or tilling; if the soil is very compacted, it may be necessary to do a deep tillage or disking. Break up soil lumps to make a smooth surface. Rocks in the soil are beneficial as they provide a microclimate for enhancing germination and seedling development. Distribute seed evenly over the soil surface. This can be made easier by mixing seed with 4 parts soil, sand, mulch, or sawdust in order to provide additional bulk for ease of spreading. Lightly rake this seed mixture into the top ¼ inch of the soil.

A light application of ammonium phosphate (16-20-0) can be beneficial to wildflowers densely planted, as in a garden situation. Fertilizer in naturalized wildflower plantings is generally not necessary. For enhanced germination, spread mulch over the soil surface. This will maintain soil moisture for a longer period of time, resulting in additional water conservation.

For best results regular watering is required. Water 2 or 3 times weekly for initial seedling germination. Once seedlings are established a thorough weekly watering will provide a dazzling display of flowers. If you are not able, or choose not to water wildflowers, success will be determined by the amount and frequency of rainfall. In some years natural rainfall may be sufficient for a good show, while other years there may be nothing.

Spring-blooming wildflowers planted in the fall germinate shortly thereafter, spend the winter developing a small plantlet

and an extensive root system, flower with the advent of spring heat, and produce seed and dry out during late spring/early summer months. Once seed is either dispersed or collected, the removal of dried plant material will improve the aesthetic quality of the garden. (This dried plant material makes a great natural garden mulch.) It may be necessary to weed during the first year of gardening, but once wildflowers are established this becomes less of a problem.

Most desert wildflowers prefer a sunny location, but many will perform well in partial shade or filtered sunlight. Several species will grow in shade; these are noted in the text. Seeds and seedlings are the favorite foods of a variety of birds, rabbits, rodents, and insects. Netting may be necessary to circumvent voracious appetites until wildflowers are established.

Annuals bloom the first year from seed, perennials may take two years to flower (some will have sparse flowers the first year), and bulbs take several years to flower. Most native wildflower species will reseed themselves; however, additional seeding of annuals will ensure consistent displays of flowers year after year.

Wildflowers planted in different ways achieve various results: wildflower mixes in drifts have a wild informal flavor, while designed borders create a more traditional garden. Planting with vegetative community types in mind will mimic a natural desert setting; lush thick wildflowers provide an inviting colorful oasis. Planting a year-round flowering mix presents an everchanging gardening delight. The unlimited combinations of outstanding color, form, texture, and size of our desert wildflowers can achieve variable results, solve different landscape problems, and satisfy diverse gardening enthusiasts.

WILDFLOWERS

Sand Verbena

Abronia villosa

Four O'Clock Family, Nyctaginaceae

MAD



A single plant of this annual wildflower may spread to a diameter of 6 feet. The tiny pink to lavender flowers are arranged in 2 inch umbrella-like clusters which rise a few inches above the low growing

plants. The flowers have a sweet fragrance which is particularly strong in the evening. In its native habitat sand verbena prefers the well drained, sandy soils of the Mohave and Sonoran Deserts but will also perform well in a variety of garden soils. Germination is enhanced by removing seeds from the papery fruits just before planting. Seeds may take three weeks to germinate. Sand verbena is generally spring blooming, although favorable autumn rains may initiate a bloom before winter. Treat it as a spring annual in the garden.

Trailing Four O'Clock

Allionia incarnata

Four O'Clock Family, Nyctaginaceae

RJA



Trailing four o'clock is closely related to the well known cultivated four o'clock. It is a perennial with trailing stems, spreading up to several feet in diameter. It produces sticky leaves and rose-purple flowers about 1 inch in diameter, blooming in spring and continuing until fall. Trailing four o'clock is an Arizona

native with an overall distribution ranging from Colorado and Utah in the north, into southern Mexico and South America. It grows naturally in full exposure on dry slopes and plains. The "flower" of this species is actually comprised of three single flowers grouped closely together.

Purple Aster

Aster bigelovii, *A. tanacetifolius*
Sunflower Family, Asteraceae

RJA



Aster bigelovii is an annual or short lived perennial wildflower. It produces numerous blue flowers from March to November. The plant grows to about 3 feet tall and flowers profusely if regularly watered. *Aster bigelovii* grows from Colorado and New Mexico into Arizona. Seed is best sown in fall.

Aster tanacetifolius is also an annual but is shorter than *A. bigelovii*, reaching a height of 18 inches. It has bright purple flowers, blooming June through October, and will flower profusely with regular water. *Aster tanacetifolius* is found throughout western America, from Canada into Mexico. Seed may be sown spring or fall in sandy, well drained soil.

Bahia

Bahia absinthifolia
Sunflower Family, Asteraceae

MAD



Bahia is a perennial with showy yellow flowers up to 1½ inches in diameter with somewhat sparse silvery foliage. A mature plant stands about 10 to 16 inches tall and blooms both in spring

and fall. It thrives in full exposure in shallow caliche soil and freely reseeds once established. Bahia spreads by underground rhizomes. It occurs naturally in southeastern Arizona, southern Texas, and into central Mexico.

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Desert Marigold

Baileya multiradiata
Sunflower Family, Asteraceae

GS



Desert marigold is a common native throughout the arid Southwest. The 2 inch wide, bright yellow flowers are borne in profusion on stems about 18 inches long, well above the hairy, gray-green, basal foliage. This plant is a short lived perennial. It flowers heavily in spring and again in fall in response to rains, and

may flower at other times if irrigated. Desert marigold germinates best during the cool months, but is less fussy than most wildflowers. The plants live for only a few years, but will freely reseed. This species grows best in sandy soils where it needs no supplemental water for a biseasonal bloom. Desert marigold makes excellent cut flowers. In very rocky soils or on caliche, the similar *Bahia absinthifolia* is a better choice.



Farewell To Spring, Godetia

Clarkia amoena
Evening Primrose Family, Onagraceae

JNT



Farewell to spring is native to the Mediterranean climate belt from southern California to British Columbia. The 24 inch tall plants bear a multitude of 2 inch wide flowers with 4 large pink to lavender petals, each with a crimson blotch. It is one of the latest of the spring annuals, flowering in April and continuing until hot

weather arrives. This species performs well in the intermediate and high deserts with a little supplemental water. Farewell to spring is a popular garden flower worldwide and has been domesticated. Seed companies offer a wide color range, from white to pure red; double forms are also available. Some hybrids are more heat tolerant. Also offered is a sprawling, wild variant that grows only 5 inches tall.

9

Chinese Houses

Collinsia heterophylla
Figwort Family, Scrophulariaceae



The flowers of this coastal California spring annual are arranged in tiers along the stem, creating an impression of pagoda-like structures. The deep, rich purple and cream colored flowers rise on a 24 inch flowering stem above lush foliage. Chinese houses will withstand various soils but prefer moderate moisture and

light shade. The flowering season may be extended into June by the removal of withering flowers before seed sets. This wildflower makes an excellent cut flower.

Desert Coreopsis

Coreopsis bigelovii
Sunflower Family, Asteraceae



Desert coreopsis is native to the western Mohave and Sonoran Deserts in California. The 8 inch tall plants bear dense tufts of finely divided, bright green leaves. The 2 inch wide, butter yellow

flower heads are borne several inches above the foliage in spring. The annual plants produce huge quantities of seed which seem to be relished by ants, rodents, and birds. To ensure repeat performance, save the seed and resow in fall. This plant grows best in loose soils and is very compatible with desert bluebells, *Phacelia campanularia*.



Cosmos

Cosmos sulphureus
Sunflower Family, Asteraceae



Cosmos is a summer annual from tropical Mexico. The wild type is a rank grower to 6 feet tall and has bright orange flowers which appear from September until frost.

Domesticated cultivars are more compact (2 to

3 feet tall), have flowers ranging from yellow to red, and flower as early as 10 weeks after planting and continue for several weeks in showy profusion. A succession of plantings will result in flowers from June until frost. The flower heads of both the wild and domesticated types are about 2 inches across, with large "petals" or ray flowers. Cosmos tolerates some drought, but performs best with moderate water. It easily reseeds itself.

Sacred Datura, Thorn Apple

Datura wrightii (*D. meteloides*)
Potato Family, Solanaceae



This outstanding perennial produces stunning, 6 inch long, trumpet-shaped flowers of bright white to pale lavender. Sacred datura grows wild along roadsides, in arroyos, and upon plains of the Southwest. In a mature plant, dozens of flowers protrude from a 36 inch high mound of large, coarse, gray-green foliage. While the flower

is sweet smelling, the foliage emits an odor not so pleasant, described in one reference as smelling "like a wet dog." From May through November, blossoms unfold at night and close in the morning. In shady locations blooms may persist well into daylight hours. Sacred datura prefers well drained soil. Plant in late winter or early spring. All parts of sacred datura are very toxic and may be lethal. The roots were brewed and consumed by Native Americans of the Southwest to induce visions in religious ceremonies. Contact with the plant may cause a skin rash in some people.

Bluedicks, Brodiaea

Dichelostemma pulchellum
Lily Family, Liliaceae



Bluedicks bear 2½ inch diameter, lavender-blue flower clusters on stems up to 18 inches tall. This is a perennial wildflower, overwintering as a small bulb beneath the soil. Bluedicks begin growth in late winter with a few grass-like leaves, followed in early spring with flowers, then fruits, and by late spring or early summer are dormant until the next

season. They are native to dry, open, rocky slopes, occurring naturally from southwestern New Mexico, across southern Arizona, south into Mexico, and north into California and Oregon. This species may be propagated by seed or bulb division. Plants will flower from seed in 2 to 3 years. Plant bulbs 3 to 5 inches apart and 3 to 4 inches deep. In colder regions, dig up bulbs and store in a cool, dry place for winter. In the past the bulbs of bluedicks were used as a food by early Pima and Tohono O'odham Indians; today the collection of these and other bulbs is prohibited by the Arizona native plant law.

Golden Dyssodia

Dyssodia pentachaeta
Sunflower Family, Asteraceae



These low growing, short lived perennials form tufts reaching only a few inches in height. They present a brilliant golden display when grown in a mass planting. Golden dyssodia does well in sun baked locations and in poor soils. Typically it blooms in late spring, although a second flowering often occurs following heavy summer rains.

If given supplemental watering in a garden situation, golden dyssodia will provide blooms almost year round. *Dyssodia acerosa* is a woody stemmed, 12 inch tall perennial with similar flowers. Plant both species in fall, winter, or spring.

Mexican Gold Poppy, California Poppy

Eschscholtzia mexicana, E. californica
Poppy Family, Papaveraceae



These two very similar members of the poppy family are among the showiest and easiest of wildflowers. The deep orange California poppy is native to coastal California and the western edge of the

Mohave Desert. Mexican gold poppy, found mostly in Arizona, is in the eastern Mohave Desert and throughout the Sonoran Desert. The Mexican gold poppy is a smaller plant, has flowers that are usually golden yellow or light orange instead of deep orange, and requires less water than the California poppy. Both poppies bear profusions of 2 inch flowers with 4 large petals beginning as early as February (in the low desert) and continuing until hot weather.

These annual poppies grow in almost any soil except heavy clay and require almost no care. Mexican gold poppy is also offered in creamy white and light pink flower colors. California poppy is grown in gardens worldwide, and domesticated forms may have white, yellow, pink, lavender, and red flowers in addition to the original deep orange; double forms also exist.

Other species that may be available are *E. glyptosperma*, a dwarf plant only 3 inches tall but with large flowers; *E. parishii*, similar to *E. mexicana* but more lax and native to drier habitats; and *E. minutiflora*, a plant with tiny flowers only ¼ inch across. Mexican poppy reseeds freely in desert areas while California poppy usually needs to be resown annually.

The poppy plant is mildly narcotic and has been used to deaden pain. It is the Mexican gold poppy that gives Picacho Peak in Arizona its colorful appearance after generous winter rains.



Firewheel, Indian Blanket

Gaillardia pulchella

Sunflower Family, Asteraceae

RJA



Firewheel is a widespread annual found throughout semi-desert grasslands of Arizona and into Colorado and Nebraska and east to Missouri and Louisiana. It has showy 2 inch diameter

flower heads, each borne on a separate stem. The ray flowers or "petals" are yellow on the outer edges and deep maroon red toward the center. The center of the flower head, the disk, is also a deep maroon red. The seeds of firewheel are hairy as are the bright green leaves. Firewheel blooms April through September and often longer when given extra moisture. Plants grow 12 to 18 inches tall and equally wide. This easily germinated species is an excellent wildflower when added to a mixture to give a natural meadow effect and to extend the bloom season throughout summer months.



Wild Sunflower, Mirasol

Helianthus annuus

Sunflower Family, Asteraceae

RJA



Seeds of wild sunflower will sprout either in late winter or with the arrival of summer rains. The plants become coarse and large with age, easily attaining a height of 8 feet. The flower heads have the

typical bright golden ray flowers or "petals" and maroon disks of cultivated sunflowers, but the size of each flower head is much smaller, with a maximum width of about 5 inches. A

single plant will produce dozens of flower heads. Plants sprouted during winter will begin blooming by May. Though the plants suffer from early summer heat and dryness, summer rains will revive them for a prolonged bloom season. This common annual western wild sunflower grows vigorously, spreads readily by seed, and can create an impenetrable thicket where conditions are favorable. Many insects and birds are attracted to these plants. The giant, single-headed sunflower is a cultivar of the wild sunflower. Wild sunflowers have been cultivated since pre-Columbian times for yellow dye from the flower heads and blue-black dye from the seed. These dyes are used extensively in Indian basketry and weaving. Oil from the seed is used for cooking and the seed itself makes good livestock feed.

Arizona Poppy

Kallstroemia grandiflora

Caltrop Family, Zygophyllaceae

MAD



Arizona poppy, in the same family as creosote bush, is a low growing annual attaining a maximum height of 12 inches and spreading to 4 feet. It is one of the showiest of summer wildflowers with 1½

inch, bright orange flowers with red centers, resembling the Mexican or California poppy. It is known to flower from May through September, but is typically a summer monsoon season species. It occurs naturally from Texas to Arizona, and south into Mexico. Arizona poppy is a close relative of puncture vine, *Tribulus terrestris*, and care should be taken when weeding out the latter, as the seedlings are very similar. Because the seeds of Arizona poppy do not have sharp spines, they are not a nuisance. This wildflower is difficult to germinate. The plants appear to thrive best when neglected.

Tidy Tips

Layia platyglossa

Sunflower Family, Asteraceae

JM



Tidy tips is an annual and when mature stands 12 inches tall. The spring flowers are 1 to 1½ inches in diameter and yellow with white tips and a pinkish underside. This species grows naturally

on open grassy hillsides, valley floors, and disturbed land in California, south to central Baja California. Tidy tips provides a showy display when planted in a mass. A related native Arizona species that is also desirable is *L. glandulosa*, a handsome plant with pure white "petals" or ray flowers.



Yellow Blanket, Bladderpod

Lesquerella gordonii

Mustard Family, Brassicaceae

RJA



Bladderpod is an annual rarely reaching over 8 inches in height. The small, ¼ to ½ inch diameter yellow flowers are produced from February to May. This species occurs in open, dry areas and is native

from Oklahoma to Utah, Arizona, California, and into Mexico. The common name, bladderpod, refers to the ripened seed capsules that are about ¼ inch in diameter, spherical, and filled with air.

Scarlet Flax, Blue Flax

Linum grandiflorum var. rubrum, L. lewisii

Flax Family, Linaceae

JRE



Scarlet flax, an old world annual, has become naturalized in many parts of the U.S. The thin, sparsely leaved stems grow rapidly to a height of 24 to 36 inches. The brilliant scarlet 1 inch

flowers are very thin petaled and last only for a day. Numerous flowers open each day during the blooming period of mid to late spring in desert gardens. The seed is not tolerant of extreme summer temperatures; therefore, reseeding is usually necessary each fall or winter for spring flowering in low desert gardens.

Blue flax has ¾ inch sky blue flowers which rest lightly atop delicate foliage. The plant reaches 24 inches in height and maintains a neat form. Named after Meriwether Lewis, this spring blooming perennial is found throughout the West from 3,000 to 10,000 feet in elevation. In low desert gardens this species will require supplemental water for best performance. Linen and linseed oil are derived from plants in the flax family.

ML



L. lewisii

Lupine

Lupinus arizonicus, *L. sparsiflorus*, *L. succulentus*
Legume Family, Fabaceae



Lupinus arizonicus, a lower elevation species, is not as frost tolerant as other lupines. This species bears many pale pinkish purple flower spikes above bright green foliage from January to May. *Lupinus arizonicus* is commonly found along roadsides and will grow to a height of 24 inches.

The flowers of *L. sparsiflorus* are deep blue and bloom from January to May in the Arizona deserts. This annual reaches an overall height up to 24 inches and produces numerous flower spikes per plant. Most commonly this lupine is found growing along roadsides where extra moisture from runoff augments the rainfall. The leaf of *L. sparsiflorus* is distinctive; leaflets are arranged like spokes on a wheel.

Lupinus succulentus will grow to a height of 36 inches, with striking, violet-blue flower spikes borne above succulent foliage. This species is the easiest to germinate but will require additional water for a good flower show.

Lupine has been described by many as a difficult wildflower to grow, but those who have been successful say that pouring boiling water over the seed and letting it soak overnight before fall sowing will produce great success in spring.

The name lupine comes from the Latin word meaning wolf. It has been applied to these plants because they were believed to steal fertility from the soil. In reality they grow well in poor soils. Because of their nitrogen fixing abilities they will improve the soil where they grow. Alkaloid toxins in some species are known to be poisonous to livestock, especially sheep.



Evening Scented Stock

Matthiola longipetala var. *bicornis*
Mustard Family, Brassicaceae



Evening scented stock is a vigorous spring annual native to Europe. With good winter watering the plants may reach 2 feet tall by 3 feet wide, or only 1 foot tall under drier conditions. Inconspicuous by day, the ½ inch lavender flowers open at sunset and release a heavy, sweet fragrance that can be smelled at a distance. (Some people find it overpowering.) Though it reseeds prolifically under cultivation, it is rarely found in the wild because it is highly palatable to wildlife.

Blackfoot Daisy

Melampodium leucanthum
Sunflower Family, Asteraceae



Blackfoot daisy is a showy, low growing perennial with 1 inch diameter, white, sweet-scented flowers. It flowers throughout the warm season, March to November. Blackfoot daisy forms a compact plant and attains a height of about 10 inches. It occurs naturally on dry, rocky slopes and mesas from Kansas to Texas, southern Arizona, and into Chihuahua, Mexico. Blackfoot daisy is available either as seed or container plants.

Desert Four O'Clock, Maravilla

Mirabilis multiflora

Four O'Clock Family, Nyctaginaceae

MAD



Desert four o'clock is a root perennial bearing pink to magenta-purple, trumpet-shaped flowers with 5 petals opening broadly at the mouth to about 1 inch wide. Late afternoon blooms stay open through cool

mornings. A bushy, trailing plant, desert four o'clock has heart-shaped, rich green leaves and grows up to 1 foot in height and 4 feet wide. It ranges from southern California to southern Colorado and south to northern Mexico. Some species of *Mirabilis* are cultivated as ornamentals. Desert four o'clock grows well in sandy soil among rocks, blooming spring and fall. Plant seed in late winter. *Mirabilis* is derived from the Latin word for marvelous (*maravilla* is Spanish for the same). For Native Americans the root served to soothe stomach ache or increase appetite. The roots were reportedly chewed by Hopi to induce visions.

Five Spot

Nemophila maculata

Water Leaf Family, Hydrophyllaceae

MAD



This low growing California spring annual easily adapts to desert gardens. The light green leaves are slightly curled and have scalloped edges. The flowers are about 1 inch in width, with a dark purple spot on each of 5 light blue or white petals. *Nemophila menziesii*, baby blue eyes, is similar in form and habit to *N. maculata*,

but the petals of these flowers are a uniform, light blue. Both species will reseed themselves in desert gardens.

Evening Primrose

Oenothera berlandieri (*O. speciosa*), *O. caespitosa*,
O. deltoides, *O. primiveris*

Evening Primrose Family, Onagraceae

MAD



O. caespitosa

Showy primrose, *O. berlandieri*, will bloom spring, summer and fall with many handsome, white or pink, tissue-like flowers of up to 2 inches in diameter, with a prominent cluster of stamens at their

centers. Showy primrose is a daytime bloomer. This aggressive, 1 foot tall perennial spreads by underground rhizomes. It is available as seed or container plants.

Tufted evening primrose, *O. caespitosa*, has a basal rosette of showy, blue-green foliage with striking, white flowers up to 3 inches in diameter. These pleasantly scented flowers bloom in the evening throughout spring and again in fall. A very attractive landscape perennial, it is available as seed or container plants. It thrives throughout Arizona on dry, stony slopes.

The birdcage evening primrose, *O. deltoides*, is a white flowered spring annual with smooth edged, gray-green foliage radiating from a central root. The showy, 3 inch wide flowers open in the evening and last through the morning. This species is generally encountered with sand verbena in the sandy parts of the low desert. The common name is derived from the dried plant remnants which resemble a birdcage.

A spring annual, *O. primiveris* grows in individual prostrate rosettes, with indented leaves 2 to 5 inches long and bears delicate flowers 2 inches broad with 4 heart-shaped yellow petals. The flowers open at dusk and can last well into a cool morning.



MAD



O. deltoides

Owl's Clover

Orthocarpus purpurascens
Figwort Family, Scrophulariaceae

MAD



This annual bears showy 6 inch tall spikes of red-purple flowers from March to May. Upon close examination of owl's clover flowers, bright yellow spots are found on the tip of the lower lip. The native range of owl's clover is southern and western Arizona, California, and Baja California. Given adequate water,

individuals of this species will branch, offering several showy flower spikes per plant. Although it is difficult to germinate, once owl's clover has germinated and flowered in a cultivated situation, it easily reseeds each year and provides a beautiful display. Remember that because the seedling is small it should be sown where it won't be crowded by larger species. Try sowing seed with grasses and other wildflowers as this species is thought to be semi-parasitic on the roots of other plants.



Shirley Poppy

Papaver rhoeas
Poppy Family, Papaveraceae

JM



This cultivar was bred from the Flanders field poppy of Europe. In the desert climate it is sown in fall and flowers in mid to late spring. This annual species grows 2 to 4 feet tall and bears a profusion of 3 to 4

inch double flowers with large, crinkled petals. The colors are in shades of pink to red as well as white and bicolors. It needs somewhat more water than most other wildflowers in our climate, but it is not a guzzler.

Penstemon, Beardtongue

Penstemon species
Figwort Family, Scrophulariaceae

GS



P. eatonii

These easy to grow, popular perennials produce tall spikes, many having tubular flowers which attract hummingbirds. There are many penstemons throughout the West, with flower colors

ranging from white to pale pink through various shades of red, blue, and purple. Most desert species are in the pink to red range: *P. parryi*, commonly found in southern Arizona, has a bright pink flower; *P. pseudospectabilis* produces stalks up to 6 feet tall with deep pink flowers; *P. superbus* is an exceptional landscape species with striking coral red flowers; *P. eatonii*, the firecracker penstemon, *P. barbatus*, and *P. bridgesii* all have bright red flowers; and *P. palmeri*, wild pink snapdragon, has exceptionally large, white to light pink flowers which produce a pleasant fragrance.

Penstemons are available as seed or container plants. Seed in the garden will germinate from August through February following sufficient rainfall or irrigation. Penstemons bloom March through July, depending on species, temperature, and available moisture. Supplemental watering in late spring will lengthen flower display. Most penstemons are slow and sporadic in germination, but well worth the effort.



MAD



P. parryi

RJA



P. barbatus

Desert Bluebells

Phacelia campanularia

Water Leaf Family, Hydrophyllaceae

MAD



Desert bluebells bear 1 inch long, brilliant blue, bell-shaped flowers in loose clusters at the top of stiff, branching stems which curl at the tips. The deep green foliage covered with fine red hairs has particular appeal. The plants grow 6 to 24 inches high, depending on soil and moisture. Desert bluebells are

found mainly in the Mohave and Sonoran Deserts of California, but perform well in other areas. Very easy to grow, this annual does best with full sun in well drained soil but will also flower in shade. Desert bluebells flower from February to May, dying with the advent of high temperatures. The hairy leaves and stems of various *Phacelia* may produce an itchy rash when touched by sensitive people.



Devil's Claw

Proboscidea parviflora, *P. altheaefolia*

Unicorn Plant Family, Pedaliaceae

MAD



Devil's claw is a summer grower native to the arid tropics of North America and belongs to the same family as sesame.

Proboscidea parviflora is a native annual that grows very rapidly to 2 feet tall and up to 8 feet

across. The 1 inch, snapdragon-like flowers are white with large purple and yellow spots. It grows in almost any soil.

Proboscidea altheaefolia is a native perennial that grows from a tuberous root; the plant grows flat on the ground spreading up to 3 feet across. Its 2 inch flowers are golden yellow with darker lines. It prefers loose, sandy soils.

Both species produce the strangely shaped, woody fruits that give the plants their name. The black, fibrous fruit coatings are

24

popular for use in basketry and for decorations. The young fruits and mature seeds are edible.

Paperflower

Psilostrophe cooperi

Sunflower Family, Asteraceae

RJA



This hemispherical, perennial gray-green shrub may attain a height of 18 to 24 inches and be covered with a profusion of clear yellow, 1 inch diameter flower heads. Although paperflower may flower

year round, it flowers mostly in spring and then again in fall. This species is native to Utah, western New Mexico, Arizona, southern California, and northwestern Mexico. Paperflower is available and easily grown from seed or container plants. The common name, paperflower, refers to the old, dry, "petals" or ray flowers which remain on the plant for many weeks. For flowers in showy masses, let plants dry out for a couple of months, then irrigate. *Psilostrophe tagetina* is a more colorful species, but little is known about its cultivation.

Mexican Hat, Coneflower

Ratibida columnaris

Sunflower Family, Asteraceae

JM



Mexican hat is a perennial bearing many 1½ inch long flower heads. Yellow or maroon "petals" or ray flowers droop from a protruding cone-shaped disk. This species ranges over the Great Plains, the eastern base of the Rockies to Texas, west to Arizona, and south into Mexico. The colorful

sombrero-shaped flower heads generally appear from April to November. Mexican hat occurs in limestone soil in open areas. Easily grown from seed, it is best sown in fall, but may be sown in early spring.



25

Chia

Salvia columbariae

Mint Family, Lamiaceae

JM



Chia is a well known desert annual bearing blue flower clusters on spikes. The plants of chia are 12 to 18 inches tall. The foliage releases a minty scent when brushed against or crushed. This species blooms March through May in the Arizona deserts and is commonly found in sandy washes throughout southern

Nevada, Arizona, and California. Seeds of chia have been used by both modern people and ancient desert dwellers as a healthful, nutritious food source. Native Americans have also used the seed to make mucilaginous poultices to remove foreign particles from their eyes.

Desert Senna

Senna covesii (Cassia covesii)

Legume Family, Fabaceae

RJA



Desert senna is a perennial, flowering from April through October. The 1 inch, mustard yellow flowers contrast nicely with the silver-gray leaves.

The plants may grow to a height of 10 to 18 inches. Desert senna is native to Arizona, New Mexico, Nevada, California, and northwestern Mexico, occurring naturally on

dry, rocky slopes and mesas. This species is a free seeder and once established will yield a profusion of offspring in subsequent years.

Desert Globe Mallow

Sphaeralcea ambigua

Mallow Family, Malvaceae

MAD



Mallows are easily grown perennials which typically produce large, orange, globular flowers along upright stems. Seeds should be sown in fall or winter for spring blooms; container plants are

also available. Should plants become rangy after flowering, merely prune to the ground, and new growth will soon appear.

Sphaeralcea ambigua produces a wide range of flower color, from white through lavender, pink, red, and magenta, though most individuals have an orange flower color. To ensure color choice, container plants should be used instead of seed. Flower stalks may reach 2 feet in height on a plant 3 feet tall and equally wide.

Sphaeralcea laxa, the caliche mallow, *S. coccinea*, and *S. grossulariaefolia* are three additional species of mallows that would be worth a try in the garden, but may be difficult to acquire.

Betony, Red Mint

Stachys coccinea

Mint Family, Lamiaceae

RJA



Betony, a perennial, grows to 2 feet tall. One inch long, tubular, bright red flowers are arranged in rings at intervals around its 4 sided stem.

Betony ranges from western Texas to central Arizona and south to Mexico. Several plants will create a leafy colony splashed with red, much to the delight of hummingbirds in the garden. This showy plant is

easily cultivated in sun or shade. It requires more moisture than most desert wildflowers. An advantageous planting location would be under a faucet or an air conditioner condensation drip. Betony will germinate after spring or fall rains. In hot desert areas, it flowers in spring and fall, usually resting during the hot summer months.

Mexican Sunflower

Tithonia rotundifolia (*T. speciosa*)
Sunflower Family, Asteraceae

MAD



Mexican sunflower is a summer annual from tropical Mexico. The wild form is a rank grower to 6 feet tall and equally wide. Compact cultivars range from 2 to 4 feet. From midsummer until frost,

the plants bear many 3 inch wide, daisy-like, brilliant vermilion flowers. Mexican sunflower, like cosmos, tolerates some drought, but needs regular watering to perform well. In watered areas it comes back year after year. It is a favorite of swallowtail butterflies.

Verbena, Vervain

Verbena gooddingii
Vervain Family, Verbenaceae

MAD



This verbena is a short lived perennial with fragrant, showy, lavender to pink flowers, in clusters of up to 1½ inches in diameter. The plants mature to a height of 2 feet and 4 feet wide, forming a

rounded shrub. It flowers primarily in spring but will flower any time of the year given regular irrigation or rainfall. This species occurs naturally on dry slopes and mesas throughout Arizona, southern Texas, Utah, Nevada, California, and northwestern Mexico. Verbenas may be acquired as seed or container plants.

Golden Eye

Viguiera annua
Sunflower Family, Asteraceae

RJA



Golden eye is a tall annual attaining a mature height of 3 feet. Multitudes of brilliant yellow 1 inch blossoms atop each plant make a showy display of summer and fall color. Golden eye grows

naturally on desert plains, arroyos, and hillsides from Arizona into west Texas and northern Mexico.

Additional related Arizona native species worthy of mention are *V. multiflora*, a perennial, and *V. longifolia*, an annual. Both occur naturally at slightly higher Arizona elevations. *Viguiera deltoidea*, a small multi-branched shrub, occurs throughout the Sonoran Desert and resembles a bright green brittlebush.

Prairie Zinnia

Zinnia grandiflora
Sunflower Family, Asteraceae

MAD



This perennial spreads by underground rhizomes and tends to form a solid ground cover. The deep golden, papery, 1 inch flower heads are produced in profusion throughout summer. This species

occurs from Kansas west throughout the Southwest on dry slopes and mesas.

Zinnia acerosa is a small, woody stemmed perennial with small white flowers appearing in spring and fall. Both species of zinnia are available as seed and in containers. As seed is difficult to germinate, container plants are most reliable.

OTHER WILDFLOWERS TO LOOK FOR

Prickly Poppy

Argemone platyceras

Poppy Family, Papaveraceae

RJA



Prickly poppy is a short lived perennial with large, 4 inch diameter, white, crepe paper-like flowers borne above very prickly foliage. The plants usually attain a height of 3 feet and bloom in spring. Prickly poppy grows in dry exposed places, especially along roadsides and in washes, from Nebraska and Wyoming to

Arizona and Mexico. Although all parts of the plant are poisonous they have a history of use by Native Americans. An abundance of prickly poppy on cattle range is usually an indication of overgrazing.

Yellow Cups

Camissonia brevipes

Evening Primrose Family, Onagraceae

RJA



Yellow cups are native to the driest desert areas of the Southwest. Depending on watering, the plant height may vary from 2 inches to nearly 24 inches tall. The bright yellow, 1 inch flowers are borne

above the plants in spring. This annual species is found mainly on rocky or gravelly soils.

Indian Paintbrush

Castilleja chromosa, C. lanata

Figwort Family, Scrophulariaceae

MAD



Indian paintbrush is a popular spring perennial which is partially root parasitic. These species have bright red floral bracts that are more conspicuous than the tiny flowers.

Germination of this wildflower is very difficult.

Thistle

Cirsium neomexicanum

Sunflower Family, Asteraceae

GJ



Thistle is a biennial and grows to a height of 3 to 4 feet. It produces 2 to 3 inch diameter, lavender flower heads in spring. This species grows on exposed, dry plains, mesas, and slopes from Colorado to Nevada, south to

New Mexico, Arizona, and southern California.

Sturt's Desert Pea

Clianthus formosus

Legume Family, Fabaceae

MAD



This spectacular Australian annual legume is a prostrate plant with velvety gray foliage, only 6 inches tall but spreading to 6 feet or more. The strangely shaped, 2 inch flowers are bright

red with black spots and borne in clusters at each leaf. They bloom from early spring through summer. Sturt's desert pea does best in deep, loose soil, preferably on the acidic side. The seeds are expensive and young seedlings are somewhat delicate. It is best to start them the first year in pots and transplant after danger of frost is past. Volunteer seedlings may appear in fall. They will survive if covered when night temperatures drop below 28° F.

Spreading Fleabane

Erigeron divergens

Sunflower Family, Asteraceae

RJA



The spreading fleabane is well named for its easy proliferation. This many branched plant, 18 inches tall, bears numerous 3/4 inch flower heads consisting of many narrow "petals" or ray flowers

emerging around a yellow disk. Flowers may be lavender, white, or pink. A light delicacy of appearance is maintained even when the plants have vigorously spread across the garden.

Spreading fleabane ranges over the Great Basin, Mohave, Sonoran, and Chihuahuan Deserts. Fleabane flowers from March to September and likes well drained soil and is best treated as a short lived perennial.



Woolly Daisy

Eriophyllum lanosum

Sunflower Family, Asteraceae

RJA



This tiny, low growing plant is one of the "belly flowers," those ground hugging annuals which are almost invisible until they flower. On the desert they rarely exceed 1 to 2 inches in height, but with extra water in the home garden they may grow as tall as 8 inches and be covered with a hundred flower heads. The ray flowers

or "petals" are white and the disks are yellow, altogether 3/4 of an inch wide. The leaves are covered with a white wooliness. Plant seed on top of the ground or with a very light covering of soil during winter months. *Eriophyllum wallacei* is similar in habit and form to *E. lanosum* except the ray flowers are dark golden and slightly larger.

Painted Spurge, Wild Poinsettia

Euphorbia heterophylla

Spurge Family, Euphorbiaceae

RJA



Painted spurge is a facultative annual species in most areas. If it does not dry out or freeze, the plants will continue for several years. The plants usually grow 10 to 18 inches tall. They

produce inconspicuous little flowers above very showy, red bracts or floral leaves, similar to poinsettia. Painted spurge occurs naturally in shaded woodlands, somewhat out of the low desert areas, where more moisture is available. It occurs naturally from the southeastern U.S. to Arizona and south into tropical America. This species performs best when given some shade and slightly more water than most desert wildflowers. Throughout summer and fall it will reward you with a profusion of volunteers, almost to the point of being weedy.

Arizona Blue Eyes

Evolvulus arizonicus

Morning Glory Family, Convolvulaceae

MAD



Arizona blue eyes is a perennial plant, usually dying back to the ground in winter. It grows to several feet across and flowers from April to October with deep sky blue, 1/2 inch diameter flowers. Arizona blue eyes grows on grassy plains and hillsides in southwestern New Mexico, Arizona, and northwestern Mexico.

Desert Sunflower

Geraea canescens

Sunflower Family, Asteraceae

JM



Desert sunflower is an annual with up to 2 inch diameter yellow flowers. The plants stand 6 to 36 inches tall, usually flower from January to June, and may flower again in fall with additional water.

This species is commonly found in sandy soil and desert cobblestone from southern Utah to southeastern California, western and southern Arizona, and Sonora, Mexico. Desert sunflower often occurs in nearly pure stands covering several square miles.

MAD



I. leptotoma

Ajo Lily, Desert Lily

Hesperocallis undulata

Lily Family, Liliaceae

RJA



Ajo lily is a spectacular species flowering from February to May, with large, 2 to 3 inch diameter, trumpet-shaped, white flowers. The above ground portion of the plant dies back after flowering. It oversummers below ground as a bulb until the following winter when it emerges with a few long, twisted grass-like

leaves. It grows naturally only in southwestern Arizona, southeastern California, and northwestern Sonora, Mexico, in sandy desert soils usually growing with sand verbena and birdcage primrose. This perennial species is very difficult to cultivate and flowers only when several years old. The bulbs are edible and tasty, but slimy.

Morning Glory

Ipomoea cristulata (*I. coccinea*), *I. leptotoma*

Morning Glory Family, Convolvulaceae

MAD



These two morning glory vines are both annuals, flowering from spring through fall if given supplemental water.

Ipomoea cristulata has tubular, scarlet flowers 1 1/2 inch long and 1/2 inch wide, while *I. leptotoma* has a much larger pink or lavender flower about 2 inches in diameter.

Ipomoea cristulata occurs naturally on hillsides and canyons from western Texas into Arizona and south into tropical America. *Ipomoea leptotoma* is native to New Mexico, southern Arizona, and Mexico and is common on dry, grassy plains and mesas. Both of these species may be grown on a support or through a shrub or tree and will do best with regular watering. *Ipomoea leptotoma* may reach a length of 2 feet, and *I. cristulata* attains a length of 6 feet.

Pale Blue Trumpets

Ipomopsis longiflora

Phlox Family, Polemoniaceae

MAD



Pale blue trumpets is an annual species producing long, narrow, pale blue flowers over 2 inches long and about 1/2 inch wide. The plants stand about 15 to 18 inches tall and flower profusely throughout the warm season from March through October. This native grows on dry plains and mesas throughout

Arizona, Colorado, west Texas, and Chihuahua, Mexico. While delicate in appearance, it thrives in harsh, dry locations.

Justicia

Justicia sonora

Acanthus Family, Acanthaceae

MAD



Justicia sonora is a perennial, flowering virtually year round, except in midwinter. This species has a bright purple to lavender 3/4 inch flower that is longer than it is wide. It is a weak stemmed plant and does best if grown up through a small shrub, where it may climb to a height of 2 feet or more. First described in 1981,

this species was discovered on steep banks and canyon slopes in southern Arizona and Sonora, Mexico. It freely reseeds where moisture is available.

Toadflax

Linaria texana

Figwort Family, Scrophulariaceae

GS



Toadflax is an annual, growing to 2 feet high. Erect flowering stems sport loosely arranged 1/2 inch, bright blue flowers growing from a cluster of basal leaves. Blooming time is from February to May. Toadflax is widespread from South Carolina to British Columbia and south to southern Mexico.

Mohave Aster

Machaeranthera tortifolia (Aster abatus)

Sunflower Family, Asteraceae

MAD



This aster is a perennial subshrub growing to 2 feet high. Worthy of cultivation, Mohave aster is characterized by silvery foliage and 4 inch wide flower heads with lavender to pale violet "petals" or ray flowers and yellow disks. Flowering from March to May, this species is usually found on dry, rocky slopes and mesas from Utah, Nevada, southern California, and western Arizona.

Morning Stars, Blazing Stars, Stick Leaf

Mentzelia involucrata

Loasa Family, Loasaceae

RJA



Morning stars is an annual species growing to a height of 24 inches. Flowers are pale yellow to cream, 1½ inch in diameter, occurring from February to April. Morning stars grow in dry, sandy soils in southwestern Arizona, southeastern California, and northwestern Sonora, Mexico. There are several other

Mentzelia species in desert areas, some with bright yellow flowers (including perennials) that have potential as cultivated wildflowers. The common name, stick leaf, comes from the fact that the leaves will stick, like velcro, to clothing. Dried seed heads turn white and are attractive in dried arrangements.

Bigelow's Monkeyflower

Mimulus bigelovii

Figwort Family, Scrophulariaceae

MAD



This spring annual of the Mohave and Sonoran Deserts may bloom when the plants are less than 1 inch tall and barely visible. The 1 inch, vibrant pink flowers seem oversized for so small a plant.

With enough moisture, the plants may reach 10 inches in height and produce numerous flowers. The tiny seed may be scattered on top of a prepared bed in late fall or early winter.

Ghost Flower

Mohavea confertiflora

Figwort Family, Scrophulariaceae

RJA



Ghost flower is an annual that grows to a height of 12 inches, with pale yellow flowers 1 inch in diameter and purple spots inside the throats. This species, which flowers from February to April, grows naturally in sand and on rocky slopes. Ghost flower is native to Nevada, western Arizona, southeastern California,

northern Baja California, and northwestern Sonora, Mexico. *Mohavea breviflora*, another notable species, is a smaller plant with smaller, bright yellow flowers and is native to Nevada, northwestern Arizona, and southeastern California.

Bee Balm

Monarda austromontana

Mint Family, Lamiaceae

UAH



Bee balm is an erect annual growing to 18 inches tall. Floral bracts are whitish and subtend a whorl of white flowers which terminate the stem. A late spring and summer bloomer, this species is native to southeastern Arizona, southwestern New Mexico, and northern Mexico. It is attractive to bees and readily reseeds. The pungent

bee balm is known to be used medicinally and as flavoring in cooking.

Desert Star

Monoptilon bellioides
Sunflower Family, Asteraceae



This ground hugging annual has spreading stems terminating in small, daisy-like, white flower heads. Flowers appear from March through May. Desert star occurs in sandy soils from southern California

to southern Utah, south through western Arizona into northern Sonora, Mexico, and northeastern Baja California. This is a classic "belly flower," rarely attaining a height of 1 inch.

Purple Mat

Nama demissum, N. hispidum
Water Leaf Family, Hydrophyllaceae



Nama demissum never grows more than 2 inches tall; with water it will spread to several inches in diameter. Its small, bell-shaped, deep purple flowers are quite showy in spring. Very little is known

about the performance of this annual species because it is rarely cultivated.

Nama hispidum grows about 6 inches tall and 12 inches across. Its flowers are light lavender-blue. With supplemental water its late spring flowering season will extend through most of the summer. It reseeds well.

Chinchweed

Pectis papposa
Sunflower Family, Asteraceae



This summer flowering annual is covered with bright golden blooms. The seeds sprout after the arrival of summer rains. Depending on the moisture supply, the plants will either produce a few flowers

while still very small, or they may develop into a low, 12 inch wide circle covered with hundreds of tiny flowers. The pungent greens are used as an herb in various types of foods. Seed should be sown with a very light covering of soil prior to the onset of summer rains.

Cream Cups

Platystemon californicus
Poppy Family, Papaveraceae



Cream cups is an annual species with hairy, slender, graceful stems that grow from the base of the plant. Single pale yellow to cream colored 1 inch flowers are borne on each 12 inch stem.

They bloom March to May and prefer a moist area of the garden. In nature they are found along stream beds. Cream cups can be found from southern Utah, throughout Arizona, and into California. The peculiar fruits of cream cups have been compared to tiny ears of corn with the husks removed.

Desert Chicory

Rafinesquia neomexicana
Sunflower Family, Asteraceae

MAD



Desert chicory is an annual, growing to 18 inches high with sparse, gray-green foliage and bright white single 1½ inch flower heads at the end of each branch. The undersides of the flowers are

lavender or purple tinged and are attractively displayed in the morning hours before the flowers open. Desert chicory does well in sandy or gravelly soil, and enjoys the partial protection of woody shrubs. Flowers appear from March to June.

Purple Rocket

Sisymbrium ambiguum
Mustard Family, Brassicaceae

RJA



This showy annual mustard from the southeastern Mohave Desert is apparently unknown in cultivation. Flower spikes 2 to 8 feet tall are covered with 1 inch, bright purple flowers, resembling giant larkspur at a distance. It deserves a garden test.

COMPARATIVE TABLE

Genus and Species	Flower Color	Flower Size In Inches	Average Plant Size	Flower Season	Horticultural Depend.	Sowing Season	Annual or Peren.	Page
<i>Abronia villosa</i>	Pink	2 C	10 in. x 6 ft.	Spr	Easy	Fall	A	7
<i>Allionia incarnata</i>	Rose-Purple	1	4 in. x 6 ft.	Spr, Sum, Fall	Mod	Fall, Spr	P	7
<i>Argemone platyceras</i>	White	4	3 ft.	Spr	Diff	Fall	P	30
<i>Aster bigelovii</i>	Blue	1	3 ft.	Spr, Sum, Fall	Easy	Fall	A	8
<i>Aster tanacetifolius</i>	Purple	1	1.5 ft.	Sum, Fall	Easy	Fall, Spr	A	8
<i>Bahia absinthifolia</i>	Yellow	1.5	1.3 ft.	Spr, Fall	Mod	Fall, Spr	P	8
<i>Baileya multiradiata</i>	Yellow	2	1.5 ft.	Spr, Fall	Easy	Fall, Spr	P	9
<i>Camissonia brevipes</i>	Yellow	1	2 ft.	Spr	Unk	Fall	A	30
<i>Castilleja species</i>	Red	6 S	1 ft.	Spr	Diff	Fall	P	31
<i>Cirsium neomexicanum</i>	Lav	3	4 ft.	Spr	Unk	Fall	A	31
<i>Clarkia amoena</i>	Pink to Lav w/Red	2	2 ft.	Spr	Easy	Fall	A	9
<i>Clianthus formosus</i>	Red w/Black	2	6 in. x 6 ft.	32 Spr, Sum	Diff	Fall, Win	A	32
<i>Collinsia heterophylla</i>	Purple	8 S	2 ft.	Spr	Easy	Fall	A	10
<i>Coreopsis bigelovii</i>	Yellow	2	8 in.	Spr	Easy	Fall	A	10
<i>Cosmos sulphureus</i>	Orang, Yel, Red	2	3-6 ft.	Sum, Fall	Easy	Spr, Sum	A	11
<i>Datura wrightii</i>	White	6	3 ft.	Spr, Sum, Fall	Easy	Spr	P	11
<i>Dichelostemma pulchellum</i>	Lav-Blue	2.5 C	1.5 ft.	Spr	Mod	Fall	P	12
<i>Dyssodia acerosa</i>	Yellow	0.5	1 ft.	Spr, Sum, Fall	Unk	Fall, Win, Spr	P	12
<i>Dyssodia pentachaeta</i>	Yellow	0.5	8 in.	Spr, Sum, Fall	Easy	Fall, Win, Spr	P	12
<i>Erigeron divergens</i>	White w/Yel	0.75	1.5 ft.	Spr, Sum, Fall	Easy	Fall, Win	P	32
<i>Eriophyllum lanosum</i>	White	0.75	8 in.	Spr	Mod	Fall	A	33
<i>Eriophyllum wallacei</i>	Yellow	0.75	1 in.	Spr	Unk	Fall	A	33
<i>Eschscholtzia californica</i>	Orange	2	1.5 ft.	Spr	Easy	Fall, Win	A	13
<i>Eschscholtzia mexicana</i>	Yellow	2	1 ft.	Spr	Easy	Fall, Win	A	13
<i>Euphorbia heterophylla</i>	Red	3	1.5 ft.	Sum, Fall	Easy	Spr	A	33
<i>Evolvulus arizonicus</i>	Blue	0.5	1.5 ft.	Sum	Unk	Spr, Sum	P	34
<i>Gaillardia pulchella</i>	Yellow w/Maroon	2	1.5 ft.	Spr, Sum, Fall	Easy	Fall, Win, Spr	A	14
<i>Geraea canescens</i>	Yellow	2	3 ft.	Spr	Unk	Fall	A	34
<i>Helianthus annuus</i>	Yellow w/Maroon	8	8 ft.	Sum, Fall	Easy	Spr, Sum	A	14

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COMPARATIVE TABLE

Genus and Species	Flower Color	Flower Size In Inches	Average Plant Size	Flower Season	Horti-cultural Depend.	Sowing Season	Annual or Peren.	Page
<i>Hesperocallis undulata</i>	White	3	2 ft.	Spr	Diff	Fall	P	35
<i>Ipomoea cristulata</i>	Red	0.5	6 ft.	Spr, Sum Fall	Easy	Spr, Sun	A	35
<i>Ipomoea leptotoma</i>	Pink to Lav	2	2 ft.	Spr, Sum Fall	Easy	Spr, Sum	A	35
<i>Ipomopsis longiflora</i>	Blue	1	1.5 ft.	Spr, Sum Fall	Mod	Fall, Spr	A	36
<i>Justicia sonorae</i>	Purple	0.75	2 ft.	Spr, Sum Fall	Easy	Spr, Sum	P	36
<i>Kallstroemia grandiflora</i>	Orange	1.5	1 ft. x 4 ft.	Sum, Fall	Diff	Spr, Sum	A	15
<i>Layia platyglossa</i>	Yellow w/White	1.5	1 ft.	Spr	Easy	Fall	A	16
<i>Lesquerella gordonii</i>	Yellow	0.5	8 in.	Win, Spr	Easy	Fall, Win	A	16
<i>Linaria texana</i>	Blue	0.5	2 ft.	Spr	Unk	Fall	A	37
<i>Linum grandiflorum var. rubrum</i>	Scarlet	1	3 ft.	Spr	Easy	Fall, Win	A	17
<i>Linum lewisii</i>	Blue	0.75	2 ft.	Spr	Easy	Fall	P	17
<i>Lupinus arizonicus</i>	Pinkish-Purple	8 S	2 ft.	Spr	Mod	Fall	A	18
<i>Lupinus sparsiflorus</i>	Blue	8 S	2 ft.	Spr	Mod	Fall	A	18
<i>Lupinus succulentus</i>	Blue	18 S	3 ft.	Spr	Easy	Fall	A	18
<i>Machaeranthera tortifolia</i>	Lav to Violet	4	2 ft.	Spr	Diff	Fall	P	37
<i>Matthiola longipetala var. bicornis</i>	Lav	0.5	2 ft. x 3 ft.	Spr	Easy	Fall	A	19
<i>Melampodium leucanthum</i>	White	1	10 in.	Spr, Sum Fall	Mod	Fall, Spr	P	19
<i>Mentzelia involucrata</i>	Cream	1.5	2 ft.	Spr	Unk	Fall	A	38
<i>Mimulus bigelovii</i>	Pink	1	10 in.	Spr	Unk	Fall, Win	A	38
<i>Mirabilis multiflora</i>	Purple	1	1 ft. x 4 ft.	Spr, Fall	Mod	Win, Spr	P	20
<i>Mohavea confertiflora</i>	Cream	1	1 ft.	Spr	Diff	Fall	A	39
<i>Monarda austromontana</i>	White	6 S	1.5 ft.	Spr, Sum	Mod	Fall	A	39
<i>Monoptilon bellioides</i>	White	0.5	1 in.	Spr	Unk	Fall	A	40
<i>Nama demissum</i>	Purple	0.5	2 in. x 8 in.	Spr	Unk	Fall	A	40
<i>Nana hispidum</i>	Lav	0.5	6 in. x 12 in.	Spr, Sum	Easy	Fall	A	40
<i>Nemophila maculata</i>	Blue	1	8 in.	Spr	Easy	Fall	A	20
<i>Oenothera berlandieri</i>	Pink	2	1 ft.	Spr, Sum Fall	Easy	Fall	P	21
<i>Oenothera caespitosa</i>	White	3	1 ft.	Spr, Fall	Mod	Fall	P	21

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Genus and Species	Flower Color	Flower Size In Inches	Average Plant Size	Flower Season	Horti-cultural Depend.	Sowing Season	Annual or Peren.	Page
<i>Oenothera deltooides</i>	White	3	1 ft.	Spr	Unk	Fall	A	21
<i>Oenothera primivervis</i>	Yellow	2	4 in.	Spr	Easy	Fall	A	21
<i>Orthocarpus purpurascens</i>	Reddish-Purple	6 S	1 ft.	Spr	Diff	Fall	A	22
<i>Papaver rhoeas</i>	Pink, Red, White	4	2-4 ft.	Spr	Easy	Fall	A	22
<i>Pectis papposa</i>	Yellow	0.5	3 in. x 12 in.	Sum	Unk	Sum	A	41
<i>Penstemon barbatus</i>	Red	48 S	6 ft.	Spr	Mod	Fall	P	23
<i>Penstemon lindesii</i>	Red	12 S	2 ft.	Spr	Mod	Fall	P	23
<i>Penstemon estoni</i>	Red	18 S	2 ft.	Spr	Mod	Fall	P	23
<i>Penstemon palmeri</i>	White to Pink	48 S	6 ft.	Spr	Mod	Fall	P	23
<i>Penstemon senny</i>	Pink	18 S	3 ft.	Spr	Mod	Fall	P	23
<i>Penstemon pseudospectabilis</i>	Pink	36 S	4 ft.	Spr	Mod	Fall	P	23
<i>Penstemon superbus</i>	Red	36 S	5 ft.	Spr	Mod	Fall	P	23
<i>Phacelia campanularia</i>	Blue	1	2 ft.	Spr	Easy	Fall, Win	A	24
<i>Polystemon californicus</i>	Cream	1	12 in.	Spr	Mod	Fall	A	41
<i>Proboscidea altheaeifolia</i>	Yellow	2	10 in. x 3 ft.	Sum	Mod	Sum	P	24
<i>Proboscidea javiflora</i>	Wh w/Yel & Purple	1	2 ft. x 8 ft.	Sum	Mod	Sum	A	24
<i>Poleostrophe cooperi</i>	Yellow	1	2 ft.	Spr, Fall	Mod	Fall, Win	P	25
<i>Rafinesquia neomexicana</i>	White	1.5	1.5 ft.	Spr	Unk	Fall	A	42
<i>Ratibida columnaris</i>	Yellow or Maroon	1.5	3 ft.	Spr, Sum, Fall	Easy	Fall, Spr	P	25
<i>Salvia columbanae</i>	Blue	1/8	1.5 ft.	Spr	Mod	Fall	A	26
<i>Senna covessii</i>	Yellow	1	1.5 ft.	Spr, Sum, Fall	Easy	Win, Spr	P	26
<i>Sisymbrium ambiguum</i>	Purple	1	8 ft.	Spr	Unk	Fall	A	42
<i>Sphaeralcea ambigua</i>	Orange	24 S	3 ft.	Spr	Easy	Fall, Win	P	27
<i>Stachys coccinea</i>	Red	1	2 ft.	Spr, Fall	Easy	Fall, Win	P	27
<i>Tithonia rotundifolia</i>	Red-Orang & Yel	3	4-6 ft.	Sum, Fall	Easy	Spr, Sum	A	28
<i>Verbena gooddingii</i>	Lav to Pink	1.5 C	2 ft. x 4 ft.	Spr	Mod	Fall	P	28
<i>Viguiera annua</i>	Yellow	1	3 ft.	Sum, Fall	Easy	Fall, Spr	A	29
<i>Zinnia acerosa</i>	White	0.75	1 ft.	Spr, Fall	Diff	Fall	P	29
<i>Zinnia grandiflora</i>	yellow	1	6 in. x 2 ft.	Spr, Sum Fall	Diff	Win, Spr	P	29

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