# Four O'Clocks

Nyctaginaceae is known as the four o'clock family. Found worldwide throughout tropical, subtropical, and some temperate regions, members include such well-known plants as four o'clocks, sand verbenas, bougainvilleas, and windmills. Though of little use as food plants, many species are cultivated for ornamental purposes. A unique characteristic of the family is the type of fruit they produce, called an anthocarp, which is derived from the perianth of the flower--comprised of the non-reproductive calyx (sepals) and corolla (petals)--rather than the ovary as in true fruits. The family is represented by relatively few genera in the Mojave region.

# Family NYCTAGINACEAE
## (Four O'Clocks)

# Colorado Four O'Clock
## (Mirabilis multiflora)

Potosi Mtn; NV

Red Rock Canyon National Conservation Area; NV

Clark Mtn Range; CA

Dolan Spring, AZ

Dolan Spring, AZ

**Flowers:** funnelform; axillary involucre; wavy 5-lobed, exserted stamens, yellow anthers; magenta; 2.5"

**Stems:** erect to ascending; numerous; branched; glabrous to pubescent; green; 20"

**Leaves:** cordate to ovate; entire; opposite; strongly veined; broad, fleshy, glabrous/slight hairy; green; 5"

**Blooms:** April to September

**Range:** southwestern US; northern Mexico

**Habitat:** dry; sandy to gravelly; washes, slopes, etc.; desert to woodlands; Lower to Upper Sonoran LZs

### Notes:

common; herbaceous perennial; crepuscular flowers; grows as a rounded subshrub to 1.5' tall (3' wide) in the sw US from w TX west to s CA, south into n MEX at elevations of 2,500 to 6,000'; ribbed, globose to elliptical, brown to black, .25" fruit; aka Desert Four O'Clock (M. m. pubescens), Giant Four O'Clock (M. m. glandulosa); 3 subspecies; pollinated by hawkmoths; planted as an ornamental; traditionally used as an appetite suppressor, antiseptic, to make tea, smoked like tobacco, etc.

**Mojave presence:** native

### Comments:

This four o'clock presents very showy, magenta flowers of various hues throughout the Mojave region and surrounding areas in a variety of habitats. The brilliant blooms contrast sharply with the large, dark green leaves, making identification rather straighforward, although the various subspecies are more of a challenge as that requires a close study of the seeds (unique to each variety).

Ny2

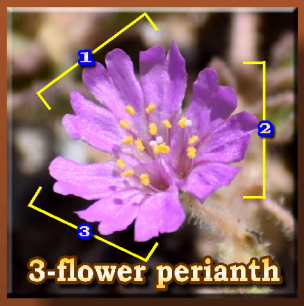
# Family NYCTAGINACEAE (Windmills)

# Trailing Windmill

## (Allionia incarnata)


Frenchman Mtn; LV, NV


Frenchman Mountain; Las Vegas, NV




Potosi Mtn; Clark Co.; NV


Frenchman Mtn; LV, NV


Dolan Springs, AZ

**Flowers:** bisexual; bilateral symmetry; axillary; 3 petals, pink stamens, yellow anthers; magenta; .75"

**Stems:** recumbent, vine-like; numerous; lightly branched; hairy, sticky; yellow green to reddish; 36"

**Leaves:** ovate; entire to sinuate; opposite; usually reddish margins, pubescent; green; 2"

**Blooms:** April to September

**Range:** southwestern US south through western South America

**Habitat:** semi-arid, sunny; sandy to rocky; desert scrub, washes, slopes, etc.; Lower Sonoran Life Zone

### Notes:

common; mainly perennial (sometimes annual); grows to about 1' tall with prostrate stems that trail for up to 3' in arid to semi-arid habitats of the sw US from TX/OK west to s CA south to SA at elevations up to 5,000' (though usually lower); perianth composed of 3 separate flowers, each with 3 petals split at ends; aka Pink Three-Flower, Trailing Allionia; 3 subspecies

**Mojave presence:** native

### Comments:

The flowers of windmills are quite unusual, in that they are actually a perianth comprised of a cluster of three individual flowers grouped together, each possessing three petals split at the ends, giving the bloom the appearance of having eighteen petals! However, in the field, the plants' more distinctive characteristics include the rich magenta color of the flowers, exserted stamens with bright yellow anthers, a vine-like growth along the ground (giving rise to their "trailing" moniker), and reddish leaf margins.

Ny3

# Family NYCTAGINACEAE
## (Sand Verbenas)

# Desert Sand Verbena
## (Abronia villosa)

Boulder City, NV

Interstate 11; Boulder City, NV

Boulder City, NV

Boulder City, NV

Boulder City, NV

**Flowers:** tubular; clustered involucre; 5-lobed, wavy, white throat; aromatic; pink, lavender; .58"

**Stems:** prostrate, ascending; numerous; branched; glandular pubescence, sticky; green; 10"

**Leaves:** ovate to elliptical; entire/sinuate; opposite; glandular pubescence, sticky; green; 1.5"

**Blooms:** March to June

**Range:** southwestern US; Baja California and northwestern Mexico

**Habitat:** arid; sandy to gravelly; desert scrub, washes, flats, etc.; Lower Sonoran Life Zone

### Notes:

common locally; herbaceous annual; grows in mats to 6" tall, 2' wide in the Mojave Desert (se CA, s NV, w AZ) south into Baja and nw MEX at elevations up to 3,500'; winged (3-5), .25", triangular, beaked fruit; aka Chaparral Sand Verbena, Pink Sand Verbena, Hairy Sand Verbena; 4 subspecies; poultice made from leaves/flowers traditionally used for pain relief, to reduce swelling, and to treat burns

Mojave presence: native

### Comments:

Though its flower clusters are very similar in appearance to some "true" verbenas--especially the Gooding's Verbena Glandularia goodingii (which is closely related to snapdragons and mints in the order Lamiales)--the sand verbena is a member of an entirely different family. In the field, it can be distinguished by the shape of its leaves (oval vs deeply lobed). Often found intimately associated with the white-flowered Dune Evening Primrose Oenothera deltoides, the association makes for a very attractive combination.

Ny4