Nyctaginaceae Jussieu

Four-o’clock Family

**Herbs**, annual or perennial. **Roots** fibrous to fleshy. **Stems** prostrate to erect. **Leaves** opposite, sessile or petiolate. **Leaves** various to ovate or round, mostly succulent, margins usually entire to wavy, glabrous to pubescent. **Flowers** bisexual; corolla absent; calyx usually 5 connate sepals, colorful and corolla-like; involucral bracts distinct or connate; stamen number usually equal to the number of calyx lobes; stigmas capitate or linear, exserted or not beyond styles; ovary with one carpel. **Fruit** with or without cavities, glabrous or pubescent; with 5 or 10 longitudinal wings, ribs or lines; wings when present thick or thin.

Warm regions worldwide.

Approximately 30 genera.
2 genera in Oregon.

Although mainly a tropical and subtropical family, seven species within this family are native to Oregon. This family has a unique fruit type, known as an anthocarp, which is a small, one-seeded fruit enclosed by a fused perianth or receptacle.

Key to Genera

1. Fruit with distinct wing like outgrowths; involucral bracts not fused; stigmas linear, not exerted beyond stamens. ................................................................. *Abronia*

1’ Fruit without wings, but sometimes with short longitudinal ridges or lines; involucral bracts fused to form a funnel-like tube; stigmas capitate and extended beyond the stamens. ................................................................. *Mirabilis*

*Abronia* Jussieu

Sand verbena

**Herbs**, annual or perennial. **Stems** prostrate to erect. **Leaves** usually basal and cauleine; blade often thick and succulent; base usually asymmetric. **Inflorescences** axillary with peduncles, arranged in capitate clusters; 5-10 persistent distinct bracts forming an involucre. **Flowers** bisexual; perianth radially symmetric, funnel-shaped or salviform, constricted distally to ovary, expanding to a 5 lobed limb; stamens 5-9, stamens and styles included, stigmas linear. **Fruits** winged; turbinate, cordate, rhombic or obdeltate; wings (2-) 5.

Sandy habitats.
Approximately 20 species.
4 species in Oregon.

Despite the common name, *Abronia* is not closely related to *Verbena* which is in the family Verbenaceae. Indeed, *Abronia* and *Verbena* are in different orders (Caryophyllales and Lamiales, respectively).

1. Perianth white to pale pink; stems decumbent to ascending; inland.
   2. Flowers 25-60 per inflorescence; perennial; perianth white .......... *Abronia mellifera*
   2’ Flowers 15-35 per inflorescence; annual (infrequently perennial); perianth white to pale pink ................................................... *Abronia turbinata*
1’ Perianth not white to pale pink; stems prostrate and forming dense to loose mats; coastal.

3. Perianth yellow, flowers 17-35 per inflorescence; plants perennial.
   .............................. .................................................. *Abronia latifolia*
3’ Perianth purple to magenta; flowers 14-18 per inflorescence; plants annual.
   .......................................................... .......................... *Abronia umbellata* var. *retrosa*

*Abronia latifolia* Eschscholtz

Yellow sand verbena

N

**Plants** perennial; forming prostrate mat. **Stems** branched; glabrous to densely glandular pubescent. **Leaves** succulent, nearly orbicular to reniform; blade 1-3 cm long; petiole 0.5-4 cm, margins usually entire, sometimes wavy, glabrous or viscid puberulent. **Inflorescences**: involucral bracts membranous, usually 5, ovate, 7-10(-12) mm long; flowers 17-35 per inflorescence. **Perianth** tube yellowish green 6.5-18 mm long; limbs yellow, 8-13 mm in diameter. **Fruits** with 4-5 thin wings, rhombic in profile, tapered at both ends, cavities extending into wings, 8-15 mm long.

Dunes, sandy soils, coastal scrub.

Clat; Coos, Curr, Doug, Lane, Linc, Till; CA; north to British Colombia.

Within Oregon, *A. latifolia* is easily distinguished from other *Abronia* species by its yellow inflorescences.
*Abronia mellifera* Douglas ex Hooker

White sand verbena

N

**Plants** perennial. **Stems** decumbent to ascending and much branched, glabrous to glandular-pubescent, usually reddish. **Leaves** nearly linear to elliptic, 1-5.5 cm long, petiole 1-7 cm long, glabrous to glandular-pubescent, margins entire to wavy, infrequently shallowly lobed. **Inflorescences:** involucral bracts lanceolate to obovate, 5-12 mm long, flowers 25-60 per inflorescence. **Perianth** tube pale rose, sometimes greenish distally, 11-20 mm long; limbs white, 7-12 mm in diameter. **Fruits** winged, base attenuate, apex prominently beaked, without cavities; wings (2-) 5 (when 2, folded together), thin, usually leathery.

Sandy soils, cold desert scrub, grasslands.

Harn, Hood, Gill, Malh, Morr, Sher, Umit; ID, WA; east to WY.

Although morphologically similar to *A. turbinata*, *A. mellifera* can generally be distinguished from the former by the large number of flowers in its inflorescences.

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*A. turbinata* Torrey ex S. Watson

Transmontane sand verbena

N

**Plants** annual, infrequently perennial. **Stems** decumbent to ascending and much branched, reddish at least basally, glandular-pubescent, rarely glabrous or viscid-pubescent. **Leaves** broadly ovate to orbiculate, 0.5-3 cm long, petiole 0.5-4 cm long, glabrous or sparsely glandular-pubescent, margins entire to wavy. **Inflorescence:** involucral bracts papery, lanceolate to ovate, 3-10 mm long; flowers 15-35 per inflorescence. **Perianth** tube greenish to light pink 6-18 mm; limbs white to pale pink, 6-18 mm diam. **Fruits** turbinate with 5 (sometimes 2 when folded) coriaceous wings, truncate distally with conspicuous dilations, cavities extended throughout.

Sandy soils and desert scrub.

Harn, Malh; CA, NV.
A poultice, made from the leaves of *A. turbinata* was reportedly used by the Shoshone to relieve swelling.

*Abronia umbellata* Lamarck ssp. *breviflora* (Standley) Munz

Plants annual. **Stems** prostrate and much branched, forming loose mats, glandular pubescent to glabrous. **Leaves** ovate, elliptic or rhombic, 1.5-5 cm long, petiole 1-8 cm long, glandular-puberulent to glandular-villous, usually glaucous. **Inflorescence:** involucral bracts papery, lanceolate to ovate, 5-7 mm long, flowers 14-18 per inflorescence. **Perianth** tube magenta to greenish, 6.5-18 mm long; limbs magenta, 6-16 mm in diameter. **Fruits** 6-12 mm long with 5 truncate, poorly to moderately developed wings that taper to apex.

Sandy soils, coastal scrub, dunes.

Clat; Coos, Curr, Doug, Lane, Linc, Till; CA.

*Abronia umbellata* ssp. *breviflora* is listed as endangered by the state of Oregon.

*Mirabilis* Linnaeus.

Four-o’clock

Temperate and tropical regions

Approximately 60 species.
2 species in Oregon

**Herbs**, perennial. **Stems** erect, ascending or decumbent, densely leafy, evenly distributed along stem. **Leaves** of basal portion petiolate, broader, distal leaves sessile or subsessile and narrower, margins entire. **Inflorescence** terminal and axillary; bracts persistent, fused forming a funnel shaped involucre that is herbaceous to papery. **Flowers** bisexual; perianth radially symmetric, campanulate to funnelform and constricted beyond ovary; limb 5 lobed, with 3-6 exerted stamens; styles exserted beyond stamens; stigmas capitate. **Fruits** radially symmetric with 5 or10 ribs or longitudinal lines, fruit obovoid, ellipsoid, or nearly globose, smooth or tuberculate, leathery, glabrous or pubescent, without glands.

The common name of four-o’clock is said to come from the habit of *Mirabilis* species flowering later in the day. It should be noted, however, that *Mirabilis* do not always
flower at exactly four-o’clock. *Mirabilis nyctaginea* is considered a noxious weed in some states; there is no representative voucher of this species in Oregon, but it is known from nearby counties in Idaho and Nevada.

1. Leaf blades less than 3.5 cm long; flowers 1 per inflorescence; perianth white rarely tinged with pink at base; involucre 5-7mm long……… *Mirabilis laevis var. retrosa* 

1’ Leaf blades greater than 3.5cm long; flowers 6 per inflorescence; perianth magenta; involucre 13-23 mm long……………………………………. *Mirabilis macfarlanei*

*Mirabilis laevis* (Bentham) Curran var. *retrosa* (A. Heller) Jepson

N

**Stems** decumbent to erect, usually many, clumped, glabrous to glabrate basally, sparsely to densely retrorse-puberulent distally. **Leaves** ovate to ovate-rhombic to subreniform, 0.5-3.5 cm long, petiole 0.1-2 cm long. **Inflorescence** a cyme with nearly equal branches; involucral bracts clustered, nearly sessile, 5-7mm long, over half connate. **Flowers** 1(-2) per involucre, perianth usually white, rarely tinged with pink at base. **Fruits** gray-brown to dark brown, often mottled with ten pale longitudinal lines, ellipsoid, obovoid or almost spherical.

Desert brushlands and banks.

Harn, Malh; CA, NV, UT; southeast to AZ.

*Mirabilis macfarlanei* Constance & Rollins

N

**Plants** forming round clusters, 6-10 dm tall. **Stems** decumbent to ascending, puberulent. **Leaves** at mid-stem circular to ovate-oblong, basally obtuse to cordate, apex obtuse to rounded, rarely acute, 3.5-5 cm long, petiole 0.5-2 cm long. **Inflorescence**: involucres 5, fused about halfway, erect or ascending, 13-23 mm long, funnelform. **Perianth** magenta, 1.5-2.5 cm long. **Fruits** light brown, with 10 slender ribs visible when wet, widely obovoid to ellipsoid, 6-7.5 mm long, secreting mucilage abundantly on ribs when wet.

Slopes in canyons.

Wall; ID.
This species is restricted to Wallowa Mountains in Oregon and one adjacent county in Idaho, *M. macfarlanei* is listed as endangered by the state of Oregon.