



United States  
Department of  
Agriculture

Forest  
Service



# Selected Wildflowers of the Modoc National Forest

An introduction to the flora of the Modoc Plateau



**Cover image:** Spotted Mission-Bells (*Fritillaria atropurpurea*)



# Selected Wildflowers of the Modoc National Forest

*Modoc National Forest, Pacific Southwest Region*



# Introduction

## *Dear Visitor,*

We in the Modoc National Forest Botany program thank you for your interest in our local flora. This booklet was prepared with funds from the Forest Service Celebrating Wildflowers program, whose goals are to serve our nation by introducing the American public to the aesthetic, recreational, biological, ecological, medicinal, and economic values of our native botanical resources. By becoming more thoroughly acquainted with local plants and their multiple values, we hope to consequently increase awareness and understanding of the Forest Service's management undertakings regarding plants, including our rare plant conservation programs, invasive plant management programs, native plant materials programs, and botanical research initiatives.

This booklet is a trial booklet whose purpose, as part of the Celebrating Wildflowers program (as above explained), is to increase awareness of local plants. The Modoc NF Botany program earnestly welcomes your feedback; whether you found the book helpful or not, if there were too many plants represented or too few, if the information was useful to you or if there is more useful information that could be added, or any other comments or concerns. Thank you.

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*Asst. Forest Botanist*  
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## Acknowledgements

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The photos and text of this wildflower guide are the work of Cheryl Beyer, erstwhile Modoc NF Botanist, and Forest Jay Gauna, currently Modoc NF Assistant Botanist. Thanks also to Dick Read, Valerie Lantz, and Rachel Lemieux for additional photos and editing. The taxonomy follows either the Jepson Manual (JC Hickman, ed., UC Press) or the USDA PLANTS database ([plants.usda.gov](http://plants.usda.gov)). Family designations follow PF Stevens' Angiosperm Phylogeny Website ([www.mobot.org/MOBOT/Research/APweb/](http://www.mobot.org/MOBOT/Research/APweb/)).

No booklet would exist without the indispensable help of the Pacific Southwest Regional Office staff, especially Winnie Weber, Ervin Castle, and Mario Chocooj, whose graphic artistry is responsible for so pleasing a layout.



# TOC

## Coyote Mint

### *Monardella odoratissima*

The flower being described is actually the light-lavender colored one in the background, the purple one in the fore being another pretty flower called a penstemon or chilpan. The name 'coyote mint' is applied to other members of the genus, but in Modoc refers to this species. The scent of the leaves is strong but pleasant; after smelling it, it will be unmistakable. This plant belongs to the mint family (Lamiaceae, a.k.a. Labiatae) from which come other potent-smelling herbs like mint, sage, rosemary, and thyme (whereas parsley belongs to another great spice-producing family, the celery family or Apiaciae). Native Americans have used a tea of this plant as a beverage and for medicine, but as always, it must be cautioned that you not try ingesting plant products without an expert identification.



MINT FAMILY (Lamiaceae)

## Indian Paintbrushes

### *Castilleja spp.*

Many species of Indian paintbrush are found throughout the western US. The Modoc National Forest has over 10 species of this showy genus, which belongs to the Lousewort (Broomrape) family. Members of this family are nearly always parasitic; some have even evolved to the point of losing all their chlorophyll (e.g., *Orobanche*) and instead take food from their host plants. Indian paintbrushes normally bloom in the summer. Flower colors can range from bright red to orange, yellow, or even green.



BROOMRAPE FAMILY (Orobanchaceae)





## Janish's Penstemon

### *Penstemon janishiae*

Penstemons are widely cultivated for their beautiful flowers, which are commonly deep blue or purple (though a good proportion of species break this rule). This penstemon, though, is rare, and known from very few locations in the Modoc area.



## Kittentails

### *Synthyris missurica*

Kittentails produces striking blue inflorescences above nearly round, crenate leaves. This northern member of the snapdragon family is found in California only in Modoc and Lassen Counties. It occurs in the Warners at higher elevations on cool, north-facing slopes, both in the open and under conifers.





## Speedwells

*Veronica spp.*

Speedwells are plants of the snapdragon family, and share the common family characteristic of bilaterally symmetric flowers, although they are less noticeably so than most other family members. The name “speedwell” may derive from the medicinal use of this genus that would speedily make one well; however, there are other theories. The leaves are always opposite, and the petals are 4, with a large upper petal formed from the evolutionary fusion of the two top petals. This genus likes wet meadow areas, as reflected in an alternative common name: brooklime. *Brook* meant, in old English, the same as it does today, and *lime* meant adobe-grade mud - thus, the plant that grew in such mud.



SNAPDRAGON FAMILY (*Plantaginaceae*)

## Skunky Monkeyflower

*Mimulus mephiticus*

Skunky monkeyflower is a low-growing annual of the monkeyflower family, which is closely related to the snapdragon family. It is found in gravelly and sandy habitats, including well-drained roadsides. Its petals are either magenta or yellow with small maroon spots at the base of the corolla lobes. Skunky monkeyflower, named because of the odor of its bruised leaves, occurs in the Warner Mountains and on the Modoc Plateau. About 15 different monkeyflowers are found on the Modoc National Forest, including the endemic Ephemeral monkeyflower, a yellow-flowered annual of vernal wet areas primarily growing on the Devil’s Garden Ranger District.



MONKEYFLOWER FAMILY (*Phymaceae*)





## Primrose Monkeyflower

*Mimulus primuloides*

This species may be called “primrose monkeyflower,” in order to distinguish it from what is typically called “monkeyflower,” *Mimulus guttatus*. Although this other species is larger, they both have yellow flowers and grow in the moist parts of meadows and riverbanks. This tiny plant grows to a maximum of five inches, and is quite common; still, the bright little flower is a treat for whoever takes the time to look down and notice it. It is fairly easy to spot, even when not blooming: the leaves are usually very hairy (hard to see in this printed copy) and small, looking like a light green leaf covered with small silvery filaments. It is quite common in wet meadows.



## WATERLEAF FAMILY

### (Boraginaceae) **Oblong-leaf Bluebells**

*Mertensia oblongifolia*

The bright blue-to-purplish blooms of oblong-leaf bluebells appear not long after snow-melt. They are found on sagebrush-covered foothills to montane elevations, often one of the first bright blue flower to appear in the spring. Tall-fringed bluebells and small bluebells also occur on the Modoc National Forest. The former has fringe of fine hairs that can be seen on the margins of backlighted leaves and it blooms in late spring or summer. The latter, a spring bloomer, has a flower with the narrow part 2-3 times longer than the flared rim.

## Alpine Waterleaf

### *Hydrophyllum capitatum*

Alpine waterleaf is a spring-blooming perennial found in sagebrush scrub and yellow pine communities on the Modoc National Forest. A member of the waterleaf family, the light blue flowers are found below the leaves. Blue alpine phacelia, *Phacelia sericea* var. *ciliosa*, also of the waterleaf family, is an uncommon perennial herb found in both the Warner Mountains and on the Modoc Plateau. Blue alpine phacelia blooms during the summer.



WATERLEAF FAMILY (Boraginaceae)

## Phacelias

### *Phacelia* spp.

Members of this genus frequent the sage steppe. One of the recognizable features of many Phacelias is their tendency to have flower clusters in coiled heads, although that feature may be more easily discernible in some species than others. These plants pertain to the same family as some others known as 'stickseeds (*Amsinckia* spp.)', but whereas those plants typically have yellow flowers, the flowers of Phacelia are more commonly bluish or white.



*Phacelia linearis*



*Phacelia sericea* var. *ciliosa*





## South American Tobacco

### *Nicotiana acuminata* var. *multiflora*

The plant pictured at left with long, tubular white flowers, is a somewhat weedy non-native tobacco plant, introduced from South America. It is a close relative of *Nicotiana tabacum*, from which commercial tobacco is derived. It appears in open, disturbed places, like this roadside on the Doublehead ranger district. Tobacco is part of the Solanaceae, the tomato or nightshade family; included within this family are both common edibles like potato and tomato, and poisons like nightshade and belladonna. Tobacco is extremely toxic to livestock, but they will naturally avoid it. Our native tobacco, *N. attenuata*, has shorter flowers.



## Dogbane

### *Apocynum androsaemifolium*

A common plant beloved of butterflies when in bloom, “spreading dogbane” or “bitter dogbane” can be recognized by its clusters of small, pink, bell-shaped flowers and its greyish-green, oppositely-paired leaves; like all members of its family, it exudes a milky juice when wounded. The plant is small, usually more or less a foot tall with a few spreading branches. It seems particularly to enjoy living on sunny to somewhat shady slopes or roadcuts. It has an extensive history of medical use, but can be poisonous if not used properly. It also has virtues as a small-quantity supplier of string for several Native American crafts.

## White-Stem Elkweed

### *Swertia albicaulis*

Whitestem elkweed a perennial herb in the gentian family, with erect, stiff stems growing up to 2 feet tall, and greenish white to pale blue flowers with 4 petals each. The stem leaves are opposite and somewhat white-margined. Whitestem elkweed is found in somewhat dry, shrubby to open woodlands. Monument plant, *Swertia radiata*, another tall perennial, is found in mountain meadows and open woodlands in the Warner Mountains, and has whorled leaves and yellowish-green flowers.



GENTIAN FAMILY (*Gentianaceae*)

## Yarrow

### *Achillea millefolium*

Yarrow is a plant common not only on the Modoc NF but around the world; the same species is known from Europe, where it was reputedly used as a medicine for the Trojan War hero Achilles, and from whom it derives the first portion of its Latin name. The second portion, *millefolium*, refers to the feathery leaves (literally 'thousand-leaf'). The plant is well known for the pleasant smell of its leaves.



DANDELION FAMILY (*Asteraceae*)





## Pussytoes

### *Antennaria dimorpha*

This charming little plant is known as ‘low pussytoes,’ from a fancied resemblance to a cat’s foot. This rather unlikely member of the sunflower family does not grow much above two inches, preferring rather to let its branches grow outwards parallel to the ground, a growth habit called in technical terms “caespitose.” It is a classic plant of the sagebrush country exemplified by the Devil’s Garden; look for it between early spring and mid-summer.

DANDELION FAMILY (Asteraceae)



## Arrowleaf Balsamroot

### *Balsamorhiza sagittata*

Arrowleaf balsamroot is found in open, fairly dry situations such as southerly exposures, open ridges, and park-like openings throughout the sagebrush, oak-brush, serviceberry, and ponderosa pine vegetation types. It is strongly drought resistant, and has good winter-hardiness. The large yellow flowers are similar to those of mule-ears (*Wyethia* spp.), as both species are in the daisy family; however, this species’ leaf bases are arrow-shaped, whereas those of mule-ears are oval.

## Eyelashweed

### *Blepharipappus scaber*

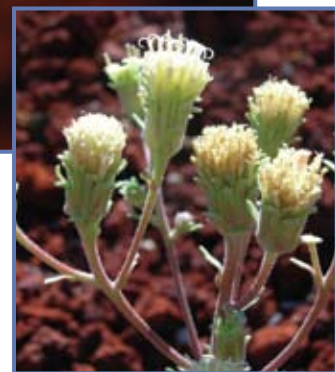
An unpretentious but enjoyable member of the sunflower family, eyelashweed is a fairly early bloomer in Modoc. The flowers are white and consist of usually five showy petals; the stems are quite slender, supporting short and slender leaves. Like other annual plants that grow in the sage steppe, this plant invests as much energy as possible in a showy flower relative to the size of its stems and leaves. Its strategy is to attract as many pollinating insects as possible during its short life, so that it may produce many small seeds. A friend has described this informally as the “live fast, die young” strategy of sage steppe plant life.



## Dusty Maiden

### *Chaenactis douglasii*

Another charmer from the Aster family (a.k.a., Sunflower family), this native plant might sometimes be mistaken for an invasive weed. In its rosette stage, it resembles some species of knapweed (which are also from this large family). Like invasive weeds, it is a primary colonizer: that is, it takes advantage of disturbed areas where other plants have not had the chance to establish themselves. This photo, for instance, was taken on a pile of pumice that had been recently mined. Like so many other plants, millennia of familiarity disclosed to the local Native Americans some medicinal uses for this plant, whose common name is ‘dusty maiden,’ owing to the decorative dusty appearance of the dissected leaves.



DANDELION FAMILY (Asteraceae)





## Rose Thistle

### *Cirsium andersonii*

Rose thistle is a native California plant, one of several thistle species that have lived in this region for hundreds of thousands of years. Because (like most thistles) it is spiny and its flowers are pinkish, it can be confused for Canada thistle, a noxious weed; however, Canada thistle flowers are smaller and its leaves have many more prickles on the edges. The beautiful magenta-colored flowers of rose thistle can be seen in woodland areas during the summer. Native thistles are important plants for hummingbirds, butterflies, and other insects, and some are rare or even endangered in California.



## Peregrine Thistle

### *Cirsium cymosum*

This common native thistle, like its noxious European counterparts, thrives where there has been disturbance to the land; however, unlike our noxious thistles (bull thistle, Canada thistle, Scotch thistle, *etc.*) it does not outcompete native vegetation and does not therefore perpetually keep the land from being productive. Rather, it represents an intermediate state between disturbance and a return to ecological health. Because of this, care should be taken to protect native thistles whilst combating invasive thistles, since these represent opposite trends of ecosystem health. This white-flowered thistle's common name is peregrine thistle, which may come from the fact that it often occurs along roadways.



## Snowy Thistle

*Cirsium occidentale*  
*var.candidissimum*

Snowy Thistle is native to California. Some people call this plant 'Christmas thistle,' because of the bright red flowers and the white-appearing stems that are cloaked in white hairs. Thistles are a maligned group, because some are bad weeds; however native thistles are important plants for hummingbirds, butterflies and other insects. Some native California thistles are rare or endangered.



## Elk Thistle

*Cirsium scariosum*

Elk thistle is another native thistle whose ancestors saw the first human beings walk into what is now northern California. This species can appear radically different from one area of California to the next; in some places it is tall, in some the flowers are purplish. Because of this, more than 15 different 'species' have been described, all of which would later be found to be variations of elk thistle. On the Modoc NF, the plant is commonly low-growing and white-flowered. All white-flowered thistles (*e.g.* peregrine thistle, grey-green thistle, elk thistle) are native to Modoc, and deserve respect for having lived in Modoc for far longer than people have.



DANDELION FAMILY (Asteraceae)





## Bull Thistle

*Cirsium vulgare*

Here we have a weedy, non-native, invasive thistle; you can feel good about despising it. This thistle has invaded California to the point that it can no longer be reasonably controlled; as one expression goes, it has its “green card.” Invasive plants do deserve admiration for their flexibility, since although they come from other continents, they still find ways of propagating; here we see bull thistle co-opting native bees as pollinators. Like the bees, we too can appreciate the pretty purple flowers, even as we try our best to keep it from spreading further.



## Spring Gold

*Crocidium multicaule*

A small plant rarely achieving more than a half-foot in stature, spring gold is unique to the extreme Western portion of our continent. It is one species of the very diverse Aster family. Although individual plants are small, on occasion they can create colonies a few square yards in size, making for a very pretty orange patch of ground. Spring gold is noteworthy because it is one of the first plants to flower in the springtime. It lives in open country, such as fields, or in open woodlands.

## Rabbitbrush

### *Ericameria nauseosa*

Rabbitbrush must surely be amongst the best known of Modoc's wildflowers. Although one of the most common shrubs in the area, one has to admire the brilliant yellow flowers whose blooms cover the bush, especially given that many other of our flowers have withered by the peak blooming season of rabbitbrush in early autumn. A curious fact is that this plant (more formally known as "rubber rabbitbrush") was once investigated by the US government as an alternative producer of rubber, although it was determined too expensive to process.



## Oregon Sunshine

### *Eriophyllum lanatum*

While known officially as "Common Woolly Sunflower," a more genial name used in these parts is "Oregon Sunshine." I will quote from the Lady Bird Johnson Native Plant Database: "This common and variable species often colors banks along roads with a blaze of yellow in drier portions of the West. The plant's white hairs conserve water by reflecting heat and reducing air movement across the leaf's surface." Those white hairs are responsible for the scientific name, *lanatum* meaning "woolly" in Latin, and *erio-phyllum* meaning "woolly-leaf" in Greek, thus literally translating as "woolly woolly leaf."



DANDELION FAMILY (Asteraceae)





## Skyblue

### *Downingia* spp.

These downingias are some of about twenty species and subspecies of small, annual vernal pool endemics found in the western US, primarily in California. Vernal pools are seasonally flooded depressions occurring on impermeable

layers such as clays. These pools retain their water for longer than the surrounding uplands, and support some uncommon and rare plants and animals. Downingias are members of the bellflower family. The petals of the different species are generally blue, often creating a vast splash of

blue color during peak bloom, and giving them the common name of “skyblue.”



## Angelica

### *Angelica* spp.

Angelica is a member of the carrot family. Members of this family range from ornamental plants (English ivy) to foods (celery, carrot) to spices (cilantro, cumin, fennel, dill) to medicines (ginseng, some angelicas) to poisons (hemlock). Spices, medicines, and poisons are often related compounds typically intended by the plant to discourage (usually insect) herbivory. Poisons have obvious anti-herbivore properties; plant-based medicines and spices often act as antibi-

otics when used by people. This plant received its name (Latin for ‘angelic’) from its beautiful firework-like flower heads and from its uses as a medicinal. Of course, unless you are a trained professional, please do not try using wild plants for medicine: mistaking a poisonous look-alike for Angelica can lead to an unpleasant death.

## Biscuitroots and Desert-Parsleys

### *Lomatium* spp.

Lomatiums, also known as desert-parsleys or biscuit-roots, are widely visible in the Modoc area. Some lomatiums are very common, whilst some other are quite rare. They may be identified by their intricately divided leaves and their clusters of flowers in umbels. Although I have not heard that desert-parsleys were used as food, the leaves do somewhat resemble parsley. The roots of some species (those called “biscuit-roots”), on the other hand, are known as a source of food, but as with other members of this family (carrot family), one must be careful not to mistake something poisonous for this plant.



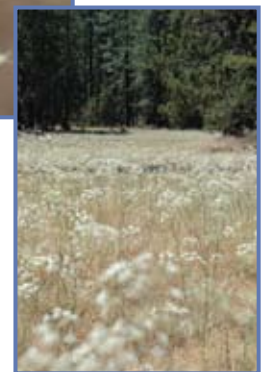
## Apos

### *Perideridia* spp.

Apos (also spelled apaw, epos, ipos, etc., and pronounced EY-paw) is a very important and characteristic Modoc-area plant. Open sagebrush-juniper scrub and open pine forest are good habitats for this plant, where it may best be found in seasonal dry meadows, as it is happiest where it is moist in spring and dry in summer. Above-ground portions of the plant present a slender aspect, with lacy dissected leaves that wither before the small globe of white flowers appear atop a thin stalk. Its edible roots have been used by Native Americans for thousands of years as an important food; it is quite tasty, but difficult to extract from the ground if one is unaware of the proper method. Its flavor vaguely resembles that of a carrot, and indeed comes from the same family - a family which has provided us with



other fine foods and spices as well, such as celery, fennel, cumin, cilantro. But, the botanists' oft-repeated mantra applies: don't try anything without expert advice, for this family also provides poison hemlock (probably fatal if ingested).





## Sugar Stick

### *Allotropa virgata*

Sugar stick is the unlikely relative of such familiar plants as heather and manzanita. Like its nearer cousin, pinedrops, it does not derive nutrition from the Sun like most plants, which is the reason that neither of these two plant species are green. Instead, it takes its food indirectly from conifers such as lodgepole pine (*Pinus contorta* ssp. *murrayana*) by parasitizing a fungus that in turn parasitizes (or more accurately, shares resources with) a tree. It is a fairly uncommon plant on the Modoc NF. Look for the red-and-white striped stems (left photo), which may be redder on younger plants.



## Manzanita

### *Arctostaphylos patula*

*Manzanita* means “little apple” in Spanish. Greenleaf manzanita, a moderate-sized erect shrub in the heath family, is one of the most wide-spread species of manzanita. The urn-shaped flowers are white, sometimes tinged with pink, that mature into a round berry-like fruit resembling a tiny apple; it turns chestnut-brown when ripe. Although it is reported that various California Native Americans made a refreshing cider from the berries of several manzanita species, berries of greenleaf manzanita are not known to be used for this purpose by anyone. However, it is eaten by bear, deer, birds, and other wildlife. The persistent, leathery leaves and dark reddish-brown stems can help distinguish it from other shrubs.

## Pinedrops

### *Pterospora andromedea*

Pinedrops is a close relative of Sugarstick, featured on the preceding page; however, on this forest, pinedrops is much more common than its relative. It is also related to such plants as wintergreen and prince's pine. Like sugarstick, this plant derives nutrition from fungi associated with a tree's root system (called *mycorrhizae*), the tree in this case being pine. The small picture insert shows the colorful plant when it is young and just coming out of the ground.



MANZANITA FAMILY (*Ericaceae*)

## Shooting Stars

### *Dodecatheon* spp.

These plants are generally known as shooting stars, but I have heard them called “rooster heads” as well. Shooting stars are a type of primrose, and in fact, it has been suggested that they properly belong within the primrose genus proper (*Primula*). We have a few species here on the Modoc, generally preferring areas of the forest where the soil is neither too moist nor too dry; it will therefore be found in open pine forest to open juniper woodlands, but less commonly in pure sagebrush habitat. The first flowers of shooting star have traditionally been known as sign of spring.



PRIMROSE FAMILY (*Primulaceae*)





## Skyrocket

### *Ipomopsis aggregata*

A plant with lovely trumpet-shaped red flowers. Skyrocket (as it is called) is a biennial, one of those interesting plants which blooms only once before dying, perhaps adding a melancholy note to the bright flowers. The leaves, while not smelling entirely pleasant, are pretty as well, each leaf finely dissected into delicate lobes. The tubular flowers are made to be pollinated by hummingbirds: by putting the nectar at the back of the flower and the pollen-bearing anthers at the front, the hummingbird must necessarily dust itself with pollen in order to get at the nectar.



## Phloxes

### *Phlox spp.*

*Phlox* is the ancient Greek word for 'flame,' and is applied to these plants because the bright and prolific flowers stand out from the typically brownish-grey forest floor. Seven species of phlox, all native, are known from the Modoc NF, but phloxes from other places are often sold in nurseries and can be seen in many flower gardens. The flowers are distinctive: beginning as a long, slender trumpet-shaped tube, and ending abruptly with five petals forming a flat surface perpendicular to the tube. The leaves are typically very small, sometimes even appearing as nothing more than dense green spines.



## Slender Phlox

### *Microsteris gracilis*

Charming flowers can often be overlooked by humans, for any of several reasons; this little phlox, for instance, is quite common, but its flowers are small by our standards, the foliage of the plant is not very noticeable, and it typically grows most abundantly in somewhat disturbed areas that might not strike one as a place to seek wildflowers. Still, its little pink flowers (about 3 mm in total width) deserve mention, if only because this plant is so common that you are likely to find it growing in any yard. And yes, it is indeed a close relative of the phlox sold for landscaping, although it differs enough to be placed in a different genus.



PHLOX FAMILY (Polemoniaceae)

## Serviceberry

### *Amelanchier utahensis*

Serviceberry is a shrub well-known to hikers and other collectors of wild foods, who enjoy the sweetish berries during high summer, this venerable tradition being handed down from our Native American forebears. Besides eating the berries fresh, they may also be dried and made into cakes as a preserved food. There are other traditional uses for serviceberry which make use of its wood for various crafts. It is a large bush, perhaps better called a shrubby tree, with roundish, dusty-green leaves that usually have little teeth on the upper half of the leaf. The flowers are quite pretty, large, and white. *Amelanchier* is a member of the Rose family, like so many other plants bearing tasty fruit.



ROSE FAMILY (Rosaceae)





## Fern Bush

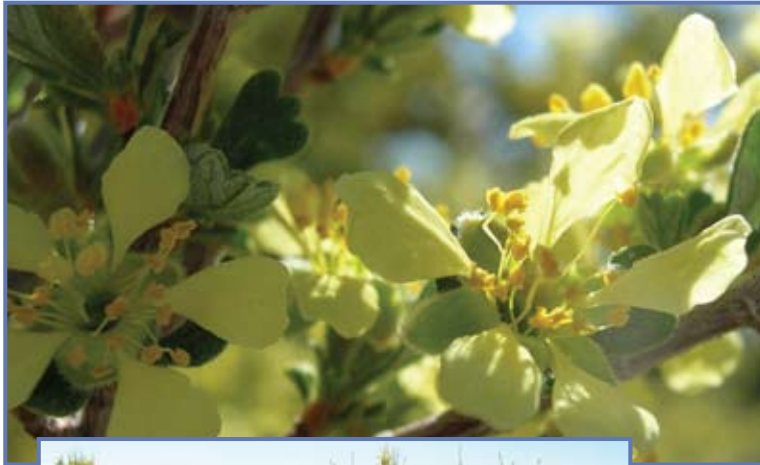
### *Chamaebatiaria millefolium*

“Fern-bush” is the name by which this plant is sometimes known, and its delicate, lacy leaves are the reason. The leaves are covered with small gland-tipped hairs, which make the leaf seem to glisten somewhat in the sun. These glands secrete a sweet-smelling plant resin, which are responsible for another of its

common names, “desert sweet.”

A relative of this plant grows on the west slope of the Cascade Range and the Sierra Nevada from Shasta to Kern County, and shares the characteristic fern-like, resinous leaf. That plant, however, is not as large a shrub as this, and forms thick mats that are very hard to walk through. For this reason, that plant is called

“mountain misery.” Both of these pertain to the rose family.



## Bitterbrush

### *Purshia tridentata*

Bitterbrush is a bush of the Rose family, well known as a favorite food of deer during the late fall and winter months. Besides deer, bitterbrush feeds pronghorn antelope and cattle.

In Modoc country, bitterbrush reaches its peak of bloom about May, when the bush is entirely covered in dull yellow flowers. When not blooming, it may be identified by its distinctive leaves: they are usually less than an inch long, with three teeth at the end (thus ‘*tri-dentata*’); they are dark green on the upper surface and covered with dense white hairs on the lower. An interesting fact is that bitterbrush is one of the few higher plants outside the legume family with the ability to fix nitrogen, thanks to a symbiotic association with the bacterium *Frankia*. Mountain mahogany is another such plant, also in the Rose family.



## Wild Rose

### *Rosa woodsii*

The rose needs no introduction. This, however, is not a typical cultivated rose, but rather a wild rose native to the Forest; its common name is “interior rose”. It often occurs along the upland banks of streams or at the drier edges of meadows, liking neither too much water nor too little. Its flowers are five-petaled, producing bright red fruits called ‘hips.’ The rose being common to temperate old world and new alike, Europeans, Middle Easterners, East Asians, and Native Americans all found medicinal and culinary uses for nearly all its parts.



ROSE FAMILY (Rosaceae)

## Mahala Mat

### *Ceanothus prostratus*

Mahala mat is a low-growing shrub with persistent, opposite, toothed leaves that form a carpet-like ground cover. The small, blue flowers appear in the spring. A member of the buckthorn family, this plant grows in somewhat open coniferous forest habitat.

Like bitterbrush on the preceding page, some *Ceanothus* species associate with a bacterium that fixes soil nitrogen. This is why mahala mat and especially its brother, snowbrush (*C. velutinus*), are often seen after wildfires: the fire burns away soil nitrogen, an important plant nutrient, so only a nitrogen-fixing plant like snowbrush can successfully grow there. This begins anew the process of re-introducing nitrogen into that soil.



BUCKBRUSH FAMILY (Rhamnaceae)





## Rabbit Eggs

### *Astragalus purshii*

Known officially to the US Department of Agriculture as “woollypod milkvetch,” and officially in California by the even more prosaic name “Pursh’s milkvetch,” I have heard this called by the far more delightful name of “rabbit eggs”. The last and first names refer to the mature pods of the plant, which are about ½” long and covered with a thick, snow-white fuzz. Although the pods are fun, the flowers that produce them are a lovely shade of bright purple and contrast nicely with the sparsely hairy leaves. The plant hugs the ground closely, but though they can be inconspicuous, look around for them - they like the gravelly soil of the sage steppe best of all.



## Balloon-pod Milkvetch

### *Astragalus whitneyi*

Balloon-pod milkvetch is a member of the legume family, which includes common foods like beans, peas, and peanuts, but also highly toxic plants like the rosary pea. Milkvetches (genus *Astragalus*) are common on the Modoc NF, which boasts several species of this profoundly diverse genus. In the South, relatives of this plant are called ‘locoweeds,’ due to an addictive toxin that causes cattle to act strangely (“*loco*”) and die. Although plants from this area are not known to be poisonous in this way, some may have other harmful compounds that make it a bad choice of food for either man or beast. Cattle will typically avoid them.

Many milkvetches have balloon-shaped pods. The brightly spotted pods of balloon-pod milkvetch are shown here.

## Burke's Lupine

### *Lupinus burkei*

After some cursory investigation, the assertion that this plant belongs to the bean family might not be as improbable as it sounds. The seeds are indeed in a bean-like pod (although do not eat them - they are poisonous) and the flowers from which they come have the same unique shape. Like relatives, the leaf is compound (*i.e.*, composed of leaflets), and its leaflets radiating out from a center point. Lupine, derived from the French for “wolf,” is so named because it was once thought to rob the soil of nutrients, but the opposite is true: it inhabits soil already impoverished (and thus unlivable for other plants) because of its ability to fertilize the soil, and is crucial for restoring soil health.



## Silvery False-Lupine

### *Thermopsis californica* *var. argentata*

This plant is a relative of lupine, belonging to the same family: the legume family (Leguminosae, a.k.a. Fabaceae). Modoc lupine flowers are typically blue, which is a simple way to distinguish this yellow-flowered plant. It is not common; in fact, it is on the forest watchlist, a list of rare plants that we informally look after, in order to assure that ecologic diversity is not diminishing. Legumes are key in restoring soil fertility because they contain special root nodules, within which bacteria called “rhizobia” live. These bacteria convert nitrogen compounds from atmospheric nitrogen ( $N^2$ ) to nitrates, which plants are then able to utilize.



BEAN FAMILY (Fabaceae)





## Bighead Clover

### *Trifolium macrocephalum*

Bighead clover is a very attractive perennial wildflower with its strikingly large, pink inflorescence. Appearing in the spring, it is found on dry, often rocky soils, usually amongst sagebrush, in grasslands, or under yellow pine in the western US. Bighead clover cannot grow in the shade. This species has a symbiotic relationship with certain soil bacteria. These bacteria form nodules on the roots and fix atmospheric nitrogen.



## White Clover

### *Trifolium repens*

If you have ever seen a lawn, you have likely seen this clover. It is thought to be one of the most widely distributed legumes in the world, but it originated in Europe.

The flowers of white clover are white. True to the name *Tri-folium*, it has three leaflets per leaf, often (but not always) with a whitish crescent in the middle of each leaflet. Its specific epithet *repens* (creeping) refers to its habit of sending roots out from the stem nodes, which allows it to spread into its typical carpet-like form. It prefers moist and cool places like meadows and lawns. It is often seeded as a preferred food for livestock and to add (or replace) nitrogen into poor clay soils.

## Sagebrush Violet

### *Viola beckwithii*

The sagebrush violet (a.k.a., Great Basin violet) is among the first spring bloomers in Modoc, and will typically be found growing amidst the sagebrush. Its leaves, unlike most other local violets, are dissected (*i.e.*, not whole, but rather cut up into fine leaf segments) and rather hairy. The flowers are quite pretty: while the upper are always deep violet, the lower can vary from deep bluish-violet to white; however, they may always be distinguished by having a yellow spot in the center.

This plant belongs to the violet family which, curiously enough, is most closely related to willows and passionflowers. The most familiar member of this family is the common garden pansy, *V. tricolor*.



## Goosefoot Violet

### *Viola purpurea* ssp. *venosa*

Goosefoot violet is one of ten species and subspecies of violets on the Modoc National Forest. This yellow-flowered violet that blooms from May to August is found on open, rocky, fairly dry slopes, at moderate to high elevations in the mountains.





## Prairie Flax

### *Linum lewisii*

This is a species of flax, specifically called “prairie flax” or “western blue flax.” A Middle Eastern relative, common flax (*Linum usitatissimum*) is the plant from which we derive the fibers to make the cloth linen, the word “linen” coming from the Latin for this plant, *Linum*. Additionally, flax seeds are known to the health conscious as a good source of certain fatty acids that our body requires to function properly, but cannot produce on its own. These fatty acids are part of the oil in the seed, known as flaxseed or linseed oil. When processed in certain ways, linseed oil is also used as a base for oil paints.



## Dense-Leaf Draba

### *Draba densifolia*

Denseleaf draba is a mat-forming perennial in the mustard family with yellow flowers and with leaves clustered at the base. It can be found in open, rocky places from mid- to high elevations in the mountains.



## Spring Draba

### *Draba verna*

Spring draba may also go by the names shadflower, nailwort, vernal whitlow grass, or whitlow-grass. It is a tiny, tiny plant of sagebrush country, but also occurs in most of Europe, North Africa and temperate Asia. It was once thought to have been introduced to America from Europe, but is now considered native to both continents. It grows in very early spring. The flowers have four deeply notched white petals, and are borne an inch or two above the ground by a long stem. The leaves are clustered at the base. The alternative common names listed above hint at a medicinal use for this tiny and common herb; it may be used externally upon minor skin lacerations and fingernail inflammations.



## Daggerpod

### *Phoenicaulis cheiranthoides*

Although the scientific name is hard to pronounce, this plant is more commonly known and easily remembered as ‘daggerpod.’ It is so called because the pretty, vibrant purple-pinkish flowers, which are amongst the first to bloom in spring (late March), eventually bear 1-1.5 inch long brown knife-shaped pods. These pods dry out in summer and split open, thus flinging their seeds a fair distance. Daggerpod belongs to the mustard family, as evidenced by its flower parts in fours. Its preferred habitat is open, clayey soils, amongst the rocky basalt.



BROCCOLI FAMILY (*Brassicaceae*)





## Desert Combleaf

### *Polyctenium fremontii*

A member of the mustard family, desert combleaf was first described by Sereno Watson, who gave it a scientific name honouring the well-known American soldier, politician, and explorer John C. Fremont. Its generic name *Polyctenium* means “many combs” in Greek, and refers to the ½-1 inch long leaves, which are deeply pinnately lobed and thus look like little combs. It may be found in saline soils, the edges of lakes, or in playas (*i.e.*, depressions that fill with water for part of the year, leaving salty deposits when they dry out).



## Baker's Globemallow

### *Iliamna bakeri*

Baker's globemallow is a member of the mallow or hibiscus family. Like other members of this family, it has large, showy blooms and prefers full sun in a well-drained area. Although the individuals are short-lived, they reseed themselves. Baker's globemallow is a “fire-follower.” The seeds can lie dormant in the soil for many years, only germinating when a fire passes across the landscape. This allows the plants to grow after much competition has been eliminated by the fire, as well as after the burned competition has added nutrients to the ground.

## Checkermallow

### *Sidalcea* spp.

Checkermallows (for whose common name I have no explanation) are members of the mallow family, which family has gifted us with such useful plants as cotton, okra, chocolate, and cola (as in soft drinks). In another instance, the root of a European relative of checkermallow, the marsh-mallow (*Althaea officinalis*) was formerly used to make the marshmallow candy. Still other members of the family, such as Hibiscus and hollyhocks, are common ornamental plants. Members of the genus *Sidalcea* are sometimes called “wild hollyhocks,” and are indeed quite pretty when in flower. Their leaves are commonly palmate (*i.e.*, having leaf lobes that emanate from a central point on the leaf) and somewhat dissected (*i.e.*, frilly).



COTTON FAMILY (*Malvaceae*)

## Tansy-Leaf Suncup

### *Camissonia tanacetifolia*

Tansyleaf suncup, a member of the evening primrose family, has a dandelion-like rosette of jagged-edged leaves and bright yellow flowers with 4 broad petals. It grows on the edges of vernal pools, especially on the Devil's Garden and Doublehead Districts. This species is more common in vernal pools of the Columbia Plateau than typical vernal pools in California.



EVENING PRIMROSE FAMILY (*Onagraceae*)





## Clarkia

### *Clarkia* spp.

The Jepson Manual, the authoritative key to California plants, lists forty species (and many subspecies) in the genus *Clarkia*. Some species are common and widespread, whereas others are narrowly endemic (*i.e.*, found only in a very small geographic area). However, where these localized species occur, the large size of the populations can be breathtaking. The genus is named in honor of William Clark, of Lewis and Clark fame. Several of the more common species occur on the Modoc National Forest. Forest Clarkia (*Clarkia rhomboidea*), also commonly known as “farewell to spring,” has a wide ecological tolerance; that is, it has the ability to make use of a wide range of habitats, and is therefore widespread.



## Fireweed

### *Epilobium angustifolium*

Although the bright pink flowers might remind one of the flames of a fire, this plant receives its name because it is one of the first plants to appear after a fire or other event that eliminates plant competition and opens up the forest canopy; fireweed loves a wide open sky above. It is a close relative of the plants called ‘willowherbs,’ members of the Evening Primrose family (Onagraceae), known for pretty flowers. The specific epithet means, in Latin, ‘narrow leaf.’ In fall, look for the cottony seeds.

## Alfilerillo

### *Erodium cicutarium*

Common names for this plant (alfilerillo, storksbill, cranesbill, *etc.*) refer to the immature fruit, which sticks straight out from the base of the flower and resembles the beak of a crane-like bird. When the fruits dry, they separate into 5 seeds with corkscrew-shaped attachments. The flower itself has nice pink-colored petals, and might look like a tiny geranium - which is exactly right. This plant is closely related to the typical garden geraniums, and like them was introduced from Europe. Although introduced, it is very common all over the country, especially liking disturbed sites.



GERANIUM FAMILY (*Geraniaceae*)

## Western Peony

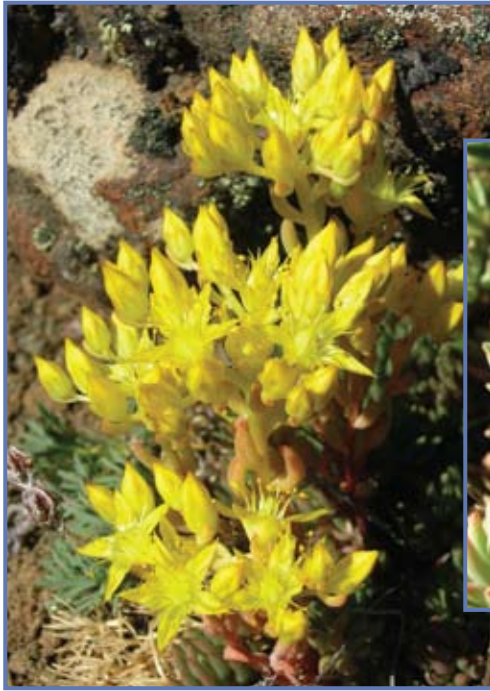
### *Paeonia brownii*

Whenever anyone asks me about a “weird plant” that they saw, the first possibility that comes into my mind is this species; and after explaining the strange features of the plant, my initial assumption is usually confirmed. Its relative, however, is the Chinese peony, much beloved by that nation which was first to domesticate it as an ornamental flower, with its many delicate ruffled petals. Ours has no such delicate petals, although it is one of the most dramatic flowers in the area, with its green or brown sepals, blood-red petals, and vivid yellow anthers.



PEONY FAMILY (*Paeoniaceae*)





## Stonecrop

### *Sedum stenopetalum*

Sedums are grown around the world as ornamentals, but also have a long and honoured history of medicinal use. The leaves of this particular species are round in cross section and longer than wide; the bright yellow flowers are borne in a cluster (technically, a congested cyme) at the end of the stem. Like most other members of its family (the Crassulaceae, “succulents” *par excellence*) it stores much of its water within itself, and prefers to live in dry, rocky, sandy places where there is plenty of sun and not much competition. Most members of this family employ a water-conserving method of photosynthesis called “Crassulacean Acid Metabolism,” which allows the plant to close its stomata (*i.e.*, air-exchanging pores on the leaf) during the day, thus conserving water.



## Pussypaws

### *Cistanthe umbellata*

Pussypaws is one of those plants that challenges everyday understanding of plants: pinedrops and coralroot are not green, for instance, and pussypaws has a limited ability to move. The stem of the large inflorescence pictured at left can raise or lower the inflorescence depending upon ground surface heat: when the ground is cool, the flowers are low, but when the ground becomes hot, the flowers are raised up and away from the earth. This plant is widely distributed, and although it occurs here on the Modoc NF, this photograph was taken on Mt. Shasta, near Panther Meadows.

Other names for this plant: *Calyptridium umbellatum* or *Spraguea umbellata*. Plant scientific names can change. Thus, this one was *Spraguea* (1851), *Calyptridium* (1886), and *Cistanthe* in (1990).

## Bitterroot

### *Lewisia rediviva*

Bitterroot, a species of the southwestern US, occurs over a wide elevational range. A member of the purslane family, the handsome flowers of this plant range from white to pink. The many succulent, linear leaves form a rosette and usually wither by flowering time. The genus is named after Merriwether Lewis, of Lewis and Clark fame, who collected a specimen of this plant near Traveler's Rest, Montana, in 1806. It is the state flower of Montana.



PURSLANE FAMILY (*Portulacaceae*)

## Wild Buckwheats

### *Eriogonum* spp.

One-hundred and fifteen Wild Buckwheat species (*Eriogonum* spp.) are found in California, with about twenty-seven species and subspecies on the Modoc National Forest. The genus name *Eriogonum* is from the Greek *erion*, meaning wool, and *gonu*, meaning knee, from the wooly stems and leaves and swollen joints of the plants. The pictured wild buckwheat is an early-flowering, mat-forming species. Flower colors of the different species of buckwheats range from white to yellow to bright red. The species pictured at right is a common Modoc plant called mat buckwheat (*Eriogonum caespitosum*).



BUCKWHEAT FAMILY (*Polygonaceae*)





## Red Columbine

### *Aquilegia formosa*

The second part of a plant's scientific name is called the 'specific epithet.' It is usually an adjective in Latin. This plant's specific epithet, *formosa*, means 'beautiful;' and I think you will agree with the one who named it that this flower is indeed beautiful. In Spanish, the word transformed into '*hermosa*,' but it retained its original form in Portuguese; when Portuguese explorers saw the island of Taiwan, they named it 'the beautiful island,' which is why on old Western maps it is called Formosa.

This plant enjoys the wet life and lives near springs and streams. It flowers between June and late August.



## Larkspurs

### *Delphinium spp.*

There is little to say regarding larkspurs, save to note that they are pretty (being members of the buttercup family) and to notify that they are poisonous (both to humans and to livestock). Most larkspurs on our forest have purple flowers, but one species (*D. nudicaule*, featured here) has orange-red flowers. They can occupy a wide variety of habitats, but do not like the heat of summer and therefore may be found most readily in the spring.



## Sagebrush Buttercup

*Ranunculus glaberrimus*  
*var. glaberrimus*

Sagebrush buttercup is one of the first flowers to appear in the spring. 'Rana,' is Latin for a 'frog.' The plant genus was so named by Carl Linnaeus, the father of taxonomy, because many of the species grow in the wet habitats also frequented by frogs.



BUTTERCUP FAMILY (*Ranunculaceae*)

## Steershead

*Dicentra uniflora*

Steershead is an attractive surprise to anyone who finds it. A small perennial in the poppy family, it may be found on open ground, typically near melting snow patches from the foothills to subalpine habitats. This aptly named little flower looks for all the world like a steer's head with spreading horns formed by its two upper petals. The lower two petals are joined to form the steer's head. Although not uncommon, it is often overlooked because of its size.



POPPY FAMILY (*Papaveraceae*)





## Camas

*Camassia quamash*  
*ssp. breviflora*

The common name of this plant, camas, is an anglicized version of northwestern Indian names referring to this plant (especially its sweetish edible bulbs) which are variously spelled ‘camass’ or ‘quamash’. The Native American term is also, obviously, the inspiration for both the generic (*Camassia*) and specific (*quamash*) Latin epithets. All across its Western North American range, it has been an important Native food; in fact, Native trade in pre-contact times is possibly responsible for extending its range. If being eaten, extreme care must be taken to not confuse it with the similar-looking but dangerously toxic Death Camas (*Zygadenus* spp.).



## Sand Lily

*Leucocrinum montanum*

Sand lily (a.k.a. wild hyacinth) is a perennial herb of the western US. It grows in sagebrush desert to open montane forest in sandy to rocky areas, flowering in the spring and early summer. The white flowers are stemless, arising amid a tuft of basal, linear leaves.



## Wild Onion

### *Allium campanulatum*

The wild onions of this forest are in fact native relatives of the common onion (*Allium cepa*) and garlic (*A. sativa*), and may be used similarly, although wild onion bulbs are quite small. Like most *Allium* species, this one has brilliant and beautiful clusters of flowers in an umbel (*i.e.*, several flowers coming from a single point on a single stalk); often, the leaves have withered when the flower stalks are in full bloom.



## Pink Star Onion

### *Allium platycaule*

Pink star onion is a perennial herb with showy flower clusters of hot pink fuzziness held on stout 3-4" winged stalks. Growing out of a bulb, this plant has thick, waxy, falcate (sickle-shaped) leaves. Found in the southwestern US, pink star onion prefers a sunny location on well-drained soil. Flowers can be seen in spring and early summer. There are about 8 species of wild onions on the Modoc National Forest.



ONION FAMILY (Alliaceae)





## Purple-Eyed Grass

### *Olsynium douglasii*

Closely related to blue-eyed grass (*Sisyrinchium idahoense*) mentioned elsewhere in this guide, purple-eyed grass has larger flowers and grows in less moist conditions than its blue-eyed relative. Specifically, it likes to grow in areas moist in spring but getting dry by summer. It seems to prefer pine woodlands, and also appears to do well after fires. It is always a joy to find in the forest.



## Blue-Eyed Grass

### *Sisyrinchium idahoense*

“Blue-eyed grass”, the common name, is a fine description of this iris relative, with its blue flowers and long, thin, grass-like leaves. It grows in drier meadows, preferring the soil to be moist in the spring, and drier into the summer.

## Spotted Coralroot

### *Corallorhiza maculata*

Spotted Coralroot is an orchid unlike the other orchids in this brochure, for it has no chlorophyll. Although not related to either Sugarstick or Pinedrops, it utilizes a similar method of acquiring food: parasitizing fungi. These three non-green plants demonstrate similarities such as the loss of chlorophyll and the loss of leaves; what we see instead are plants whose only above-ground concern is making reproductive parts (flowers and seeds). Because they do not get food from the Sun, there is neither need for chlorophyll nor for leaves to capture the sunlight. This is an example of what biologists term ‘convergence:’ organisms that exhibit similar features because they have similar ways of life, and not necessarily because they are related to one another.



## Mountain Lady's-Slipper

### *Cypripedium montanum*

Mountain lady's slipper is the largest-flowered orchid on the Forest, and has the distinction of being one of our sensitive plants. It is quite rare; the places where it grows on this Forest are carefully monitored and the well-being of the species is documented, in order to make sure that it does not become so rare that it is listed as a threatened or endangered species. Other forests have had problems in the past with illegal collecting of lady's slipper orchids, so if you see one, please enjoy and let it be.





## Bog Orchid

### *Platanthera leucostachys*

This is one of the three orchids featured in this brochure. As the name implies, it has white flowers and lives in wet areas. The wet areas can be bogs, but the plant is not restricted to places technically termed ‘bogs.’ It is equally happy in

marshes or in the wet margins of streams where water can collect. The smaller picture should provide an idea of its habitat.



## Crested Wheatgrass

### *Agropyron cristatum*

Crested wheatgrass is a hardy, long-lived perennial bunchgrass that was introduced into the U.S. in 1898 from the cold, dry plains of Siberia and Russia as a pasture and hay grass, well-suited to the severe growing conditions of some rangelands. However, it may be the most controversial grass used in seeding. It has the ability to remedy a wide array of range ills, but is also an exotic that replaces native communities. Because it is highly competitive and persistent, there is usually an accompanying loss

of biodiversity and loss in quality of wildlife habitat in areas revegetated with crested wheatgrass. Amongst grasses of our region, it is one of the most easily recognizable because of its distinctive herringbone-like seedhead or “spike.” Other names for this and closely related species include “desert wheatgrass” or “Siberian wheatgrass.”

## Saltgrass

### *Distichlis spicata*

Saltgrass is so named because it can tolerate salty or alkaline areas by taking up salt along with the water and letting it crystallize on its leaves, a process akin to the crusty mineralization that forms around a water faucet; the plant essentially sweats salt. Native Americans often used these salt secretions for seasoning food. Saltgrass is dioecious, meaning that the male and female reproductive parts are on separate plants. Here we see the beautiful pink, feathery styles, the female reproductive parts.



## Bottlebrush Squirreltail

### *Elymus elymoides*

There are similarities between this perennial native grass, known as “bottlebrush squirreltail,” and the invasive annual grass Medusahead (*Taeniatherum caput-medusae*) because they are members of the same grass tribe, the Triticeae or wheat tribe - one evolved in the New World, and the other in the Old. It is one of the few native grasses which can effectively compete with such introduced menaces as Medusahead and cheatgrass, and for this reason is a favored grass for use in ecological restoration activities. It is also an important range grass, especially while still green and tender.





## Great Basin Wildrye

### *Leymus cinereus*

Great Basin wildrye is possibly the biggest native grass growing in the Modoc area. It is important in the native ecosystems for a variety of reasons, the most important of which are its ability to help soils withstand erosion (due to its extensive systems of fibrous roots) and its value to local wildlife and livestock, for which the grass is a useful forage (even if not always a preferred forage). It may typically be found in meadows and on the drier edges of streams and ponds, preferring a soil of intermediate moisture.



## Sedges

### *Carex spp.*

Sedges are an underappreciated part of our Western landscapes; although usually in riparian areas, some common species can live in much drier conditions. Usually mistaken for grasses because of their extremely similar leaf appearance (they are, in fact, related), sedges can be distinguished by their inflorescences and by their three-ranked leaf arrangement, as opposed to the two-ranked arrangement of grasses. Sedges are of vast importance in stream and wetland health, and by extension the ecological health of all Modoc. They often have extensive roots which prevent soil erosion. They also help prevent water from draining away too quickly during the course of the dry season, vitally important in a high desert area like ours.



## Long-Haired Star-Tulip

*Calochortus longebarbatus*  
var. *longebarbatus*

Long-haired star-tulip is a rare plant of northern California, eastern Oregon, and Washington. It is a member of the lily family, growing along the edge of seasonally dry meadows in all the districts of the Modoc National Forest except the Warner Mountains.



## Mariposa Lily

*Calochortus macrocarpus*

Mariposa lily is fairly common on the Forest, and a member of a generally beautiful genus of plants; the name mariposa, in fact, is Spanish for 'butterfly.' Some other species are called fairy-lanterns, cat's ears, and sego lilies. The bulbs of sego lilies (*C. nuttallii*), which grow east of here, were once used as food by Native Americans and early Mormon settlers in Utah. On our Forest, this is one of four known species, the others being: beavertail grass (with extremely fringed bluish petals), smoky mariposa lily (petals white above, dark spot in the lower middle, and yellow at the petal base), and long-haired star-tulip, one of the Forest's sensitive species.





## Spotted Mission-Bells

### *Fritillaria atropurpurea*

Fritillaries are a photogenic group of flowers, and this one is no exception. It has a few common names, but the one most descriptive is “spotted mission-bells.” The flowers resemble bells because they hang downwards, and the petals facing outwards are rather dark. The interior of the flower petals, however, are artistically spotted, and the overall effect is very nice. Look for these flowers in wooded areas; they prefer to grow where there is plenty of pine needle duff covering the ground.



## Yellow Bells

### *Fritillaria pudica*

A monocot in the lily family, yellow bells is a perennial herb growing from an underground bulb. It is confined to western North America. This plant occurs in grasslands and sagebrush deserts to mixed conifer forests. The appearance of these little yellow flowers announces the arrival of spring.

## Scarlet Fritillary

### *Fritillaria recurva*

Scarlet fritillary is a beautiful flower that was not known to exist on this Forest until 2006. It is a member of the lily family, and one can see a resemblance in the flowers: radial symmetry, six equal petals (technically 'tepals'), six stamens, and a three-parted fruit. Fritillaries get their name from their fruits, which are dry and papery at maturity, with thin, flat seeds stacked inside that rattle when shaken. In Latin, '*fritillaria*' means 'a box containing dice.'



## Leopard Lily

### *Lilium pardalinum* *ssp. shastense*

This plant is a subspecies of leopard lily, meaning that while it can interbreed with other leopard lilies, this particular subspecies has been evolving on its own in the Shasta area for a long time, so long that it has acquired its own unique characteristics. We call it 'leopard' because of the petals, which have brown spots against a light background. Our word 'leopard,' by the way, comes from the combination of the Latin *leo* (lion) with *pardus* (leopard).



LILY FAMILY (Liliaceae)





## Corn Lily

*Veratrum californicum*

Corn lily, sometimes called “skunk cabbage”, is found in wet areas, such as meadows and the banks of streams. It flowers in July and August, but even at other times of the year, the very large leaves (thought to resemble corn husks) and meadow-like habitat make this species easy to identify. Although named ‘corn’ lily, this plant is actually not closely related to corn, and far from being edible, is quite toxic to humans and animals alike. It is known to cause birth defects in sheep.



## California Damasonium

*Damasonium californicum*

Officially known to the USDA by the astonishingly unhelpful common name “California damasonium,” this plant is one of those species that we Western

Americans can be proud grows nowhere else in the world. It is a water-loving plant, growing in ponds, along slow-moving streams, and in vernal pools. The family to which it belongs is the water-plaintain family, and demonstrates the typical family characteristics of being aquatic and having three white to lavender petals with yellow stamens and pistils in the middle.

## Scouring Rush

### *Equisetum hyemale*

The scouring rush is a kind of horsetail (*Equisetum*), an ancient genus that has changed little since before the time of the dinosaurs. Some long-extinct members of this family achieved the size of pine trees. The hollow stems of horsetails feel rough, due to the amount of silica present as (presumably) a defence against herbivory and an aid to avoid wilting. Because of this, early European settlers used the larger species (like this one) to scrub their pots and pans, thus imparting to this species its common name. What you see pictured above are not flowers, but cone-like structures called ‘strobili,’ from which the plant releases spores, not pollen or seeds. Horsetails like wet areas, and their thick roots play a role in natural erosion control.



HORSETAIL FAMILY (*Equisetaceae*)

## Bug-on-a-Stick Moss

### *Buxbaumia viridis*

Those with a microscopic bent might, with some persistence, find the capsule of this tiny uncommon moss, which is around ½ inch tall. Found on rotten logs or peaty soil in moist conifer forests, it lacks leaves, and therefore remains hidden until its sporophyte (capsule) emerges. Although widespread in Europe and Scandinavia, and apparently stable in the U.S., this species is declining and listed as rare, threatened, or endangered in most countries. Causes for this decline include changes in microclimate of deforested areas, the decrease of decayed wood in forests, and diminishing mesic forest. Removed from the distraction of color, smell, and form of flowers, we can enjoy the small, quiet charm of mosses.



Moss (*Bryophyta*)



## Syntrichia Moss

### *Syntrichia princeps*

Syntrichia moss is certainly among the more humble plants presented in this guide. It is a true moss rather than a lichen, as can be seen by its leaves and spore capsules (called ‘sporophytes’).

Though humble, this moss may play a major role in local ecosystem health. It may often be found in the undisturbed ground around the base of old junipers

as a moss mat, a form known to biologists as a tall-moss biological soil crust. Such biological crusts have been shown to dramatically reduce soil erosion by both wind and water, and thus maintain critical plant micronutrients in topsoil that would otherwise be washed into streams as silt, or blown into the air, lowering air quality.



**Back cover image:** Leopard Lily (*filium pardalinum*)

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