



United States Department of Agriculture

Pollinator Plants of the Desert Southwest

Native Milkweeds

(Asclepias spp.)



Make Way for Monarchs

A Milkweed-Butterfly Recovery Alliance

Acknowledgements

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Cover: *Asclepias incarnata* with Monarch butterfly caterpillars. Photo by Mark Fishbein

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Introduction

The Desert Southwest harbors at least 41 of the 76 milkweed (*Asclepias spp.*) species known to exist in the lower 48 states. The species richness of milkweeds in this region is influenced by the tremendous diversity and range of vegetation types, soils, topography, climate, and the exposure of unusual rock types that occur over more than a 9,000 foot elevation range. The nectar of milkweed flowers is attractive to dozens of insects including bees, wasps, butterflies, moths, and hummingbirds. The bees that milkweed flowers attract to agricultural landscapes are important for pollinating a wide variety of vegetable forage and fruit crops.

Milkweeds are named for their milky, latex sap, which contains alkaloids and cardenolides, complex chemicals that make the plants unpalatable to most animals. The plants have fleshy, pod-like fruits (follicles) that split when mature, releasing the seeds.

While the size and shape of the fruit is variable depending on the species, every milkweed seed has fluffy white hairs (coma) attached to it to aid in wind dispersal.

Like many native plant species, milkweed populations are being lost at a rapid rate due to habitat loss. Milkweeds occur in diverse habitats including along roadsides, in agricultural fields and pastures, and on abandoned agricultural lands. Habitat loss drivers include land development, agricultural intensification, and the widespread adoption of herbicide resistant crops (Brower et al., 2012; Pleasants and Oberhauser, 2012).



Figure 1: Tarantula hawk (*Pepsini spp.*) on *Asclepias subulata*. Photo by Heather Dial

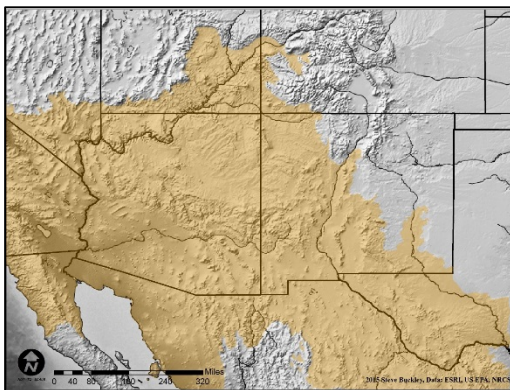


Figure 2: The approximate boundaries of the desert southwest region covered in this guide.

This guide covers the deserts of the interior western United States, a region that encompasses both the warm and cold deserts in the states of California, Arizona, Utah, Nevada, and New Mexico. It includes the Mojave, Sonoran, and Chihuahuan deserts, along with the Madrean Archipelago in central and southeastern Arizona, and the Arizona-New Mexico Mountains along the Mogollon Rim in Arizona and New Mexico along with the southern Colorado Plateau.

Historical Cultural Knowledge and Indigenous Ethnobotanical Uses

Traditional ecological and utilitarian knowledge about milkweeds in the Desert Southwest has persisted due to the many living traditions among the region's long-standing Native American cultures, as well as Hispanic and Anglo cowboy traditions. Of the milkweed species found native, naturalized, or cultivated in the desert southwest region, there are recorded traditional uses of spider milkweed (*Asclepias asperula*); short-crown milkweed (*A. brachystephana*); tropic milkweed (*A. curasaavica*); Hall's milkweed (*A. halli*); giant sand milkweed (*A. erosa*); mahogany milkweed (*A. hypoleuca*); swamp milkweed (*A. incarnata*); corn kernel milkweed (*A. latifolia*); Zizotes milkweed (*A. oenotheroides*); showy milkweed (*A. speciosa*); horsetail milkweed (*A. subverticillata*); butterfly weed (*A. tuberosa*); whorled milkweed (*A. verticillata*), and climbing milkweed (*Funastrum cynanchoides*).



Figure 3: *Asclepias speciosa*. Photo by: Max Licher

The Hopi boiled the flowers or floral buds of showy milkweed before mixing them with corn or wheat flour to then be added to meat dishes. The Seri (Comcáac) continue to eat the flowers of the vine milkweed (*Funastrum cynanchoides*) but not of *Asclepias* species. In addition, many people—especially children—have used the white latex of milkweed buds, stems, and fruits as a chewing gum, hardening the latex over a fire or by other means. Such a use has been common among the Diné (Navajo), various Piman cultures (Akimel, Tohono and Hia-ced O'odham, and the Zuni). There are some accounts from Puebloan and Hispanic peoples using milkweed pods in stews to tenderize the meat, but the culinary techniques and chemistry of this traditional practice are not well understood.

Many milkweed species in the Southwest borderlands were used medicinally—as an emetic, a treatment for warts, burns, and scalds, a respiratory aid (using powdered leaves and stems), a treatment for throat and nose congestion associated with colds and pleurisy, and when the entire plant was infused it was used as a treatment for infants afflicted with diarrhea. In addition, an infusion or tea made from various milkweed species served as a gynecological aid for mothers after childbirth. It was common among the Hopi and other tribes to use select milkweeds as a “galactagogue” to increase the flow of a new mother's breast milk for her newborn. Such uses were common among nearly all tribes on the Colorado Plateau.

In the northern reaches of the Desert Southwest region, various bands of the Southern Paiute also used the root as an analgesic to wash the head to relieve headaches. Hispanic trade for

medicinal milkweed used to treat colds, pleurisy, labor pains, and constipation (the latter especially for pregnant women) continues to this day.

The Hopi occasionally used the woody stems of milkweeds as a planting stick for dibbling seeds into their sand dune fields of native crops. The Diné and Zuni also used the floss or cottony fiber of barely-ripened seedpods to spin into string. The string was then used to fasten feathers to prayers stick (*pahos*), or it was mixed with cotton to weave dance kilts or women's belts. Rabbit nets and fishnets in the prehistoric Desert Southwest may have been comprised of both *Asclepias* and *Apocynum* species. Several milkweed species have also been used by Diné medicine men and Hispanic *curanderos* to treat livestock ailments and to increase milk flow among cattle, goats, and sheep.

Because of their varying toxicity, do not experiment with the use of *Asclepias* without consulting native or Western health care workers. For further information, see *The Useful Plants of Texas, Volume 2*, edited by Scooter Cheatam, Marshall C. Johnston and Lynn Marshall (2000); *Native American Ethnobotany* compiled and edited by Daniel E. Moerman (1998), and *Food Plants of the Sonoran Desert* by Wendy C. Hodgson (2001).

Milkweed Pollination

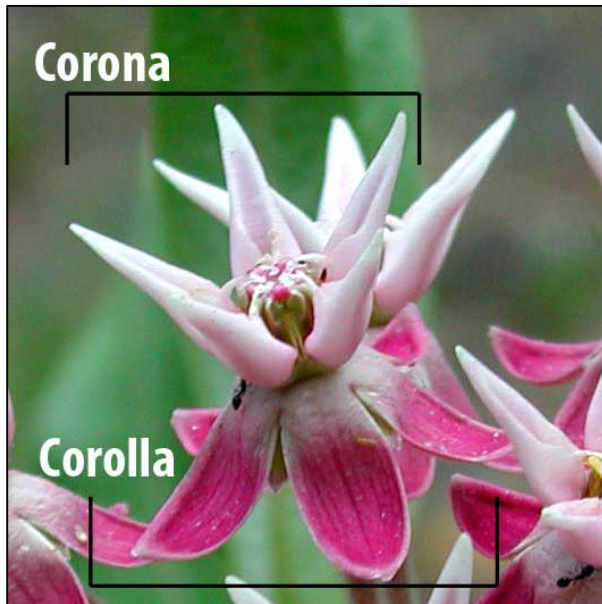


Figure 4: *Asclepias speciosa*. Photo by: Max Licher

Milkweed flowers are arranged in clusters that emerge from a common point (umbel). The flowers themselves are composed of two distinct parts, a **corolla** and a **corona**. The **corolla** is the outer and lower part of the flower and resembles petals. Often the corolla bends backwards. The **corona** is the showy upper part of the flower. Inside the corona are hoods that contain nectar.

Milkweed flowers vary in color, size, fragrance, and nectar abundance, but all share a unique manner of clustering their pollen grains in waxy sacs (pollinia). The waxy sacs are located in vertical grooves (stigmatic slits) of the flowers. Insects that visit a flower to drink nectar may slip their legs, feet, or mouthparts

into the grooves, securing the pollinia to the insect's body. Pollination occurs when the sac-carrying insect moves to another flower, transferring the pollinia into the groove of another milkweed flower. Not all visitors to milkweed flowers are effective pollinators of milkweed plants.

Monarch Butterflies

Milkweeds are the primary larval host plants for the caterpillars of the monarch butterfly (*Danaus plexippus*) (Pleasants et al., 2012). Caterpillars ingest toxic cardenolide compounds from eating milkweeds and store the compounds in their bodies. The compounds deter predation by vertebrates.

The annual migration of monarch butterflies is a widely appreciated phenomenon tracked by schools and many other groups and individuals in the U.S., Canada, and Mexico. Each fall, monarchs fly from western states to spend the winter in numerous groves along the California coast. In the spring, these butterflies leave their overwintering sites in search of milkweeds on which to lay their eggs. As monarchs spread out across the western states during the spring and summer, they produce several generations of butterflies. In fall, adults of the last generation then migrate to the California coast while some are known to migrate to Mexico to overwinter (Morris et al., 2015).

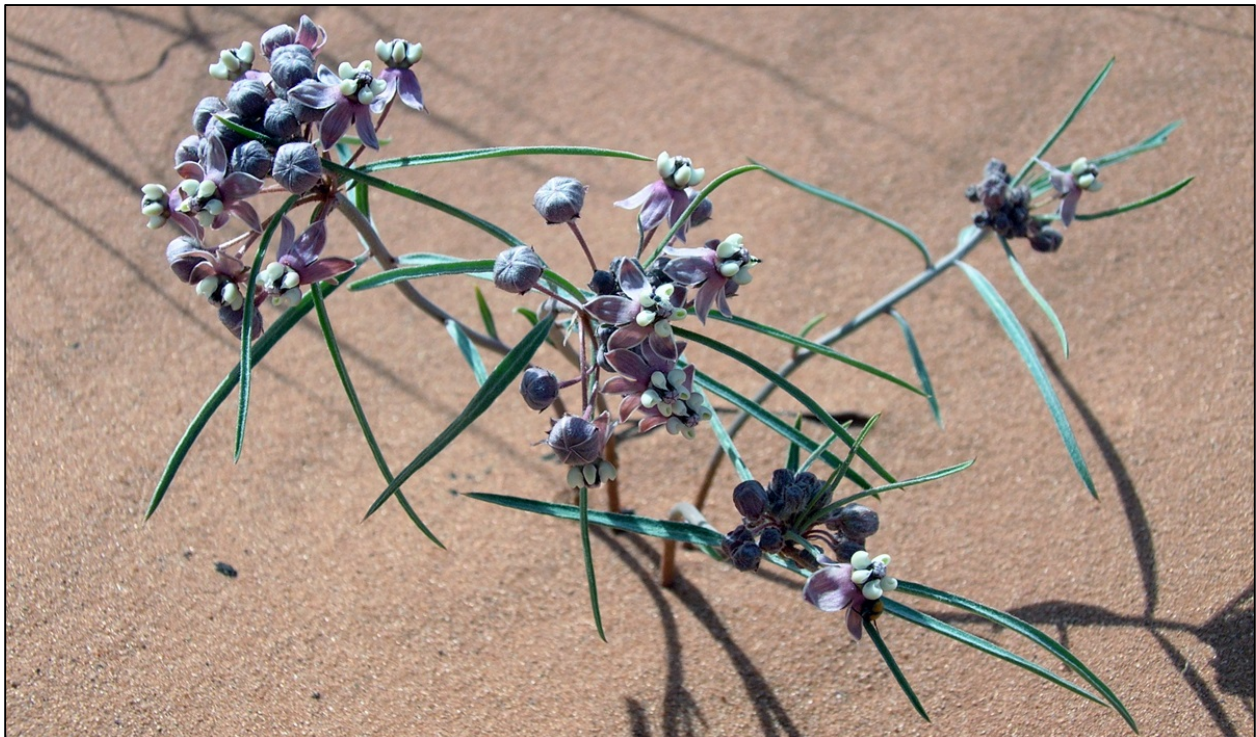


Figure 5: *Asclepias cutleri*. Photo by Mark Fishbein

Annual counts of overwintering monarchs on the California coast have revealed significant population declines (Monroe et al., 2014). In 1997 Natural Bridges State Beach near Santa Cruz overwintered an estimated 120,000 monarchs; in 2013 only 4,600 overwintered (Monroe et al., 2014). A major factor contributing to these declines is the loss of milkweed plants across the western monarch's breeding range. The protection and restoration of native milkweeds and other native nectar plants is critical to sustain pollinator habitat and reverse the downward trends in pollinator populations.

Enhancing Pollinator Populations

Native plants such as milkweeds play an important role in supporting both wild bees and honeybees. Wild native bees provide free pollination services and contribute an estimated \$3 billion worth of crop pollination annually to the U.S. economy (Losey and Vaughan, 2006). Resident pollinators are active in the field longer than the duration of a crop's bloom period and require sources of pollen and nectar throughout spring, summer, and fall. Research has shown that managed honeybees are healthier and more resistant to diseases when they have access to diverse and abundant floral resources (Alaux et al., 2010).



Figure 6: *Asclepias viridiflora*. Photo by Mark Fishbein

The nectar of milkweed flowers is attractive to dozens of insects. In particular, the honeybees, bumblebees, carpenter bees, and smaller solitary bees that milkweed flowers attract to agricultural landscapes are important for pollinating a wide variety of vegetable, forage, and fruit crops. Among the 104 species of native bees which have been found on *Asclepias* flowers in the Desert Southwest region are those in the genera of: *Agapostemon*, *Anthophora*, *Bombus*, *Centris*, *Diadasia*, *Halictus*, *Lasioglossum*, *Megachile*, *Melissodes*, and *Xylocopa* (Ikerd and Griswold, 2014; Nabhan, 2014). These bees are also critically-important pollinators of crops such as alfalfa, apples, apricots, carrots, chile peppers, cilantro, citrus, clovers, cotton, cucumbers, eggplants, lettuce, onions, safflower, sesame, sunflowers, tomatoes, vetch and watermelons, especially where introduced honey bee numbers have declined.

Attracting Beneficial Insects

In addition to attracting pollinators, milkweed nectar attracts a number of other beneficial insects to croplands, rangelands, irrigated pastures, vineyards, and orchards of the Desert Southwest. These include lady beetles (*Stethorus* spp.), parasitic and predatory wasps, hover flies (Syrphidae), and pirate bugs (*Orius* spp.) (Rea et al., 2003; Fishbein and Venable, 1996). These communities of beneficial insects are effective in controlling crop pests such as aphids, mealy bugs, mites, slugs, thrips, and whiteflies that otherwise plague cotton, fruit, and vegetable crops (Altieri and Letourneau, 1982).

Insect Pests of Milkweeds

Milkweeds are attractive to pests such as the oleander or milkweed aphid (*Aphis nerii*), which are prey for beneficial insects listed in the previous section. In southern Arizona, the small milkweed bug (*Lygaeus kalmii*) and the milkweed longhorn beetle (*Tetraopes femoratus*) are the most abundant insects foraging on and damaging milkweed foliage, seeds, and roots (Agrawal, 2004). These insects are generally host specific and are not a threat to agricultural crops.



Figure 7: *Asclepias uncialis*. Photo by Patrick Alexander

Incorporating Milkweeds into NRCS Conservation Practices

Beginning in 2008, the Farm Bill (Food, Conservation, and Energy Act of 2008) included language encouraging the development of habitat for native and managed pollinators and the use of conservation practices that benefit native and managed pollinators. For detailed information on how Farm Bill programs can help conserve and create habitat for pollinators, please consult National Tech Note 78, 2nd Ed. (2015) “Using 2014 Farm Bill Programs for Pollinator Conservation”.

NRCS conservation practices can create, enhance, or manage habitat for pollinators and other beneficial insects. The following table features examples of practices in which milkweeds can be included; it is not an exhaustive list. The recommended species are particularly attractive to egg laying monarch butterflies (Morris et al., 2015).

Conservation Practice	Code	Recommended Species	Notes
Conservation Cover	327	ASAN, ASAS, ASER, ASIN, ASNY, ASSP, ASTU	Milkweeds may be suited to bio-remediation and reclamation plantings.
Critical Area Planting	342	ASAS, ASER, ASIN, ASNY, ASSP, ASVI	Upland species grow well on slopes and hillsides and may be useful in soil stabilization.
Early Successional Habitat Development/Management	647	ASER, ASNY, ASSP, ASSU, ASTU, ASVI	Several milkweeds have good colonizing ability and are adapted to grassland and roadside conditions.
Integrated Pest Management	595	ASNY, ASSP, ASTU	Milkweed nectar attracts beneficial insects that prey upon pest insects. Providing habitat for beneficial insects has been demonstrated to be valuable for vineyards, orchards, and field crops.
Riparian Herbaceous Cover	390	ASAN, ASIN, ASTU	Some observation indicates that migrating monarchs follow riparian corridors (Dingle et al. 2005).

ASAN: *Asclepias angustifolia*; ASAS: *Asclepias asperula*; ASER: *Asclepias erosa*; ASIN: *Asclepias involucrata*; ASNY: *Asclepias nyctaginifolia*; ASSP: *Asclepias speciosa*; ASSU: *Asclepias subulata*; ASTU: *Asclepias tuberosa*; ASVI: *Asclepias viridiflora*

Establishing Milkweeds in the Arid Southwest

Planting technology for broadly adapted milkweeds is established in other areas of the country but not in the arid Southwest. Further research into planting techniques for the successful establishment of milkweeds is needed. However, important factors influencing the success of any direct seeding include seedbed preparation, seeding depth, and placement of mulch. Plantings should be scheduled to coincide with monsoonal moisture. A series of precipitation events capable of establishing seeded species is rare in the arid Southwest, so the availability of supplemental water is an important consideration.

Seeding rates will vary given the species, soil type, and other habitat considerations. Milkweed densities sufficient to maintain breeding populations of monarchs and other floral visitors may be as low as 20 plants per acre, depending upon the habitat type (Borders and Lee-Mader, 2014; Altizer and Oberhauser, 1999). If considering a milkweed seeding, please contact your local USDA NRCS field office at <http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>.

Protecting Existing Milkweed Stands

Where milkweeds already occur, in remnant natural areas or non-cropped areas such as field borders, roadsides, and ditch banks, conservation practices that involve the management of existing habitat (e.g. Restoration and Management of Rare and Declining Habitats; Upland Wildlife Habitat Management) can serve to protect the plants as a resource for monarch caterpillars, pollinators, and other beneficial insects.

It is ideal to leave milkweeds undisturbed throughout the growing season, especially when they are flowering. Milkweeds can potentially host monarch caterpillars whenever the plants have foliage. If maintenance activities such as mowing, spraying, or burning must be conducted during the growing season, treat only a subset of the total area occupied by milkweed.



Figure 8: *Asclepias erosa*. Photo by Gail Morris

Toxicity to Livestock

Milkweeds are bitter-flavored and unpalatable, and range animals will generally avoid eating them if sufficient forage is available (DiTomaso and Healy, 2007). Forero and Nader (2011) noted that depression and diarrhea are the main signs of milkweed poisoning. Most milkweed poisoning results from hungry animals being concentrated in areas where milkweed is abundant (USDA ARS, 2006). Poisoning may also occur if animals are fed hay containing large amounts of milkweed (USDA ARS, 2006). It is important to avoid the inclusion of milkweed in prepared feeds and hay.



Figure 9: *Asclepias fascicularis*. Photo by Patrick Alexander

Of the milkweed species native to the Desert Southwest, *A. subverticillata* often ranks among the most toxic to free-ranging livestock, but consumption of *A. brachystephana*, *A. latifolia*, and *A. tuberosa* can also prove deleterious to livestock (Cheatam et al., 1995; Kingsbury, 1964). The introduced *A. curassavica* is also highly toxic, but there is no evidence it has become invasive on rangelands or in irrigated pastures managed

for livestock production in Desert Southwest (Morris et al., 2015).

Tips for avoiding milkweed poisoning include: stock pastures at low densities to retain more palatable forages; during drought avoid grazing stressed animals in paddocks where milkweeds are present; keep milkweeds out of driveways or trails used by livestock; and closely observe the foraging behaviors of inexperienced animals introduced to areas containing milkweed. For more information about toxic dosage and signs of potential poisoning to livestock from consuming milkweeds, see Forero and Nader 2011.

Seed Sourcing



Figure 10: *Asclepias fascicularis*. Photo by Patrick Alexander

Commercial sources of Southwestern sourced native milkweed seed are currently scarce. The Xerces Society for Invertebrate Conservation is working to change this and has launched [Project Milkweed](#) to assist the native seed industry in increasing the production of regionally adapted seed. Seed availability is expected to increase steadily over the next several years to meet the needs of restoration projects.

Some vendors occasionally have small quantities of milkweed seed and container plants in stock. Seed and plant sources can be found using Xerces' [Milkweed Seed Finder](#) or the plant nurseries listing on the [Southwest Monarch Study website](#). It is important to plant milkweed species that are sourced as locally as possible. Please ask prospective vendors for information about the seed or plant's origin.

All applicable vendors of milkweed seed may not be represented on the Xerces Milkweed Seed Finder or Southwest Monarch Study vendor listings.

The Natural Resources Conservation Service (NRCS) does not endorse any supplier, nor does it guarantee reliability or quality of the products listed.

Species Profiles

Commercially available species

Of the 41 milkweed species that occur in the region, 11 are commercially available (varying quantity and quality) and can be utilized in restoration and revegetation efforts within their native ranges.

Arizona Milkweed (*Asclepias angustifolia*)

Spanish or Indigenous names: Talayote

Other names: Narrow-leaf milkweed, slender milkweed

Elevational range: 3,500 to 7,000 feet

Habitats: Riparian woodlands, floodplain meadows, cienega edges, canyons and arroyo bottoms.

Range: Southern Arizona, Sonora, Chihuahua and mountainous regions throughout Mexico. It is rare in Arizona and limited to the borderlands.

Flowering time: May through August

Flower color: White, commonly with a pinkish tinge to the petals

Maximum height: Generally 2 feet 4 inches tall or less

Description: Slender plants with multiple stems arising from the fibrous roots, with umbels on the upper stem and small white to pale pinkish flowers. The leaves are opposite with narrow lance-shaped blades and are sparse to somewhat dense along the length of the stem. Several nodes on the upper parts of the stem produce the umbels. The umbel is up to 3 inches across with many small flowers each about a quarter inch in size, with white to a pale pink coloring. Produces a slender pod that is erect and 1.5-3.5 inches long. This is a known monarch host plant.



Figure 11: Photo by Mark Fishbein

Spider Milkweed (*Asclepias asperula* and subsp. *asperula* and subsp. *capricornu*)

Spanish or Indigenous names: Hierba lechosa, Inmortal, Talayote

Other names: Silkweed, Spider antelope horns

Elevational range: 2,500 to 9,000 feet

Habitats: Dry rocky or gravelly slopes in desert scrub, mesquite grassland, semi-arid steppe, chaparral and oak savannas

Range: Arizona, California, Nevada, Idaho, Utah, Colorado, Oklahoma, Texas, and New Mexico; Sonora and Chihuahua, Coahuila, Durango, Hidalgo, Nuevo Leon, Oaxaca, and San Luis Potosí.

Flowering time: Throughout the warm season from April through September. In southeast AZ, typically main flowering occurs in April, with later flowering (into July) at higher latitudes and elevations. Plants damaged early in the summer may resprout later in the season.

Flower color: Chartreuse petals with reddish-purple hoods. Large flowers clustered in a perfect sphere, all with slight to heavy sweet scent.

Maximum height: Low growing, generally sprawling but upright to 1 foot or more.

Description: Low growing clump that is generally sprawling but upright with a large spherical umbel bearing yellowish-green petals that are maroon tinged. The leaves are alternate and lance shaped, often with a long tapering tip from a wider base; often the leaves have a slight upward fold. The umbel is terminal on the end of the stem and forms a distinct sphere of flowers. The flowers have greenish-yellow petals and vibrant purple hoods with a white upper margin inside the upturned petals. Produces pods that are 3-5 inches long, 1-3 inches wide, broadly ribbed with inflated walls, and tapering to a tip. Seeds per pound average between 62,000 and 87,440 seeds. This is a known monarch host plant.



Figure 11: Photo by Max Licher

Woollypod Milkweed (*Asclepias eriocarpa*)

Spanish or Indigenous names: Talayote

Other Names: Indian Milkweed

Elevational Range: 500 to 8,000 feet

Habitats: Variable, from dry rocky areas, along roadsides and other disturbed areas, to stream banks.

Range: From Baja California to northern California and east into Nevada.

Flowering Time: May through October

Flower color: Corolla cream to yellow, sometimes tinged with pink

Maximum height: Up to 3 feet tall

Description: Stout perennial with densely hairy stems that only rarely branch above. The dark green leaves are opposite and oblong to oval and covered above with dense hairs and prominent yellow mid-veins. The umbels emerge from the uppermost nodes, the flowers moderately large and greenish to yellowish-cream, while flushed with rose. Produces upright pods that are densely hairy and fat, tapering to a tip, these from 1-3.5 inches in length.

Giant Sand Milkweed (*Asclepias erosa*)

Spanish Name: Hierba del cuervo, Yierba del cuervo

Other names: Pale milkweed

Elevational range: 200 to 5,000 feet

Habitats: Washes and roadsides in Sonoran and Mohave Desert scrub.

Range: It is common on sandy plains and hummocks on either side of the Lower Colorado River, from southern Nevada and Utah in the north, to southeastern California, Baja California, southwestern Arizona, and Sonora in the south.

Flowering time: Late spring and early summer, occasionally in other seasons as rains allow

Flower color: Green petals with white hollow-cheeked hoods resembling corn kernels that yellow with age; fragrant.

Maximum height: 4 to 5 feet



Figure 12: Photo by Gail Morris

Description: This robust herb produces several stems with thick, nearly succulent, woolly white leaves that become hairless with age from a thick fleshy taproot. The woolly leaves cling to the stem and can be narrowly lanceolate or broadly ovate in shape. Its leaves are remarkably large for a perennial plant in the extremely arid portions of the Sonoran Desert. Its pale greenish, somewhat hairy flowers, are visited by hairstreak butterflies, peeps wasps, orange and black spider wasps, and yellow-banded tiphiid wasps. Orange and black milkweed bugs (*Oncopeltus fasciatus*) suck moisture from its unripe fruits. This is a known monarch host plant.

Narrowleaf Milkweed (*Asclepias fascicularis*)

Spanish or Indigenous names: Talayote

Other Names: None

Elevational Range: 150 to 7,500 feet

Habitats: Found in a range of soils from moist to very dry sites.

Range: Across southern California to the Coast Ranges, north to Washington state and south into Baja California.

Flowering Time: May through October

Flower color: Corolla greenish-white and tinged purple, the hoods a greenish-white.

Maximum height: Between two to three feet.

Description: Erect perennials with smooth stems, with both axillary and terminal umbels with many greenish-white and purple tinged flowers. The persistent leaves are whorled with 3-5 leaves at each node, each of these are narrowly linear with a tapered base, these are less than one inch wide but usually smaller and 4.5 inches long, smooth on top. The umbels are rounded on top and made up of numerous flowers with grayish pink to nearly white but greenish corolla. The upright pod is smooth and 2-5 inches long and slender, less than a half inch wide. This species is a known Monarch host plant.



Figure 13: Photo by Mark Fishbein

Swamp Milkweed (*Asclepias incarnata* ssp. *incarnata*)

Spanish name: Algodoncillo

Other names: Asclepiade rouge, Marsh milkweed, Pink milkweed, Rabbit-milk, Rose milkweed, Rose silkweed, Water nerve root, White Indian hemp

Elevational range: The subspecies has been found from 500 to 5,000 feet, but the higher order taxa is very widespread and ranges from sea level to 6,000 feet.

Habitats: In swamps, marshes and cienega edges, low fields and pastures, along rocky stream beds and openings in pine to pine-oak woodlands.

Range: Found in southern Arizona and New Mexico, plus 47 other U.S. states, and Coahuila, Mexico.

Flowering times: June to October

Flower colors: White to bright rosy red corollas and white to light pink coronas; sweet scented.

Maximum height: 5 feet

Description: Medium to tall plant, that branches above. The stems appear smooth but with minute sparse hairs. Numerous small umbels bearing pale to bright pink and white flowers. Leaves opposite the blades, narrowly lance shaped, 3-6 inches long and about a quarter inch wide and with very sparse hairs. The umbels are found near the top of the stems, with numerous flowers that are less than a quarter of an inch across. Produces pods that are erect and about 3 inches long.



Figure 14: Photo by Mark Fishbein

Slim milkweed (*Asclepias linearis*)

Spanish or Indigenous names: None

Other Names: None

Elevational Range: 0-250 m

Habitats: Found in dry prairies.

Range: Endemic to South Texas

Flowering Time: May through September

Flower color: Greenish-white

Maximum height: Less than twenty inches.

Description: Slender upright perennial that branches only at the base, and terminates in an umbel of very small greenish-white flowers. The smooth linear shaped leaves are opposite and attached directly to the stem, each 1-4 inches long and less than a quarter of an inch wide. The flowers are less than a quarter of an inch across and are in a solitary umbel or are one of several at the upper nodes, the flowers are greenish-white outside with a white interior. The upright pods are narrow and smooth and 2-4 inches long, usually bearing one to several on each plant. This plant is highly favored for monarch nectaring.



Figure 15: Photo by Mark Fishbein

Showy Milkweed (*Asclepias speciosa*)

Spanish or Indigenous names: Talayote

Other names: Broadleaf milkweed, Creek milkweed

Elevational Range: 5,000 to 8,500 feet

Habitats: Roadsides, pastures and abandoned fields in grasslands and semi-arid steppe

Range: Found throughout the intermountain west from Arizona and New Mexico north to Utah and all across Colorado and Wyoming, in addition to another half dozen states.

Flowering time: May through August or September.

Flower color: Corolla purplish-magenta or deep pink, corona light pink to nearly white.

Maximum height: Up to 4 feet tall

Description: This widespread species is a stout single to multi-stemmed plant with large opposite leaves that terminate in several umbels near the top of the stem with large pink to purplish flowers. The umbels are between 1.5 and 3 inches across with flowers about a half-inch across that have elongate hoods. The stout stems have opposite spade-shaped leaves that are fuzzy on both sides with rather woolly hairs below. Produces pods that are upright and 4 to 5 inches long and covered with hairs and soft thick spines. Average around 70,250 seeds per pound. This is a known monarch host plant.



Figure 16: Photo by Max Licher

Rush Milkweed (*Asclepias subulata*)

Spanish or Indigenous names: Jumete, Yamate, Candelilla bronco, Ajamete, Talayote

Other names: Desert milkweed

Elevation: From sea level to 3,000 feet across its range but found in the low desert below 3,000 feet in Arizona.

Habitats: Found along washes and sandy plains in scrub communities in the low deserts

Range: Found in Arizona, California, and Nevada, and south into Baja California Norte and Sur, and Sonora.

Flowering time: Sporadically throughout the year

Flower color: Corolla is pale greenish, hoods are cream turning yellowish with age.

Maximum height: Between 2 and 5 feet tall

Description: This distinctive wand-like shrub is composed of many slender stems with several umbels in the upper part of the stem of green and white flowers. The stems are often green with a bluish cast and are smooth with no leaves in age. When leaves occur they are opposite and vary in narrowness—about a half inch to 2 inches.

Produces pods that are pendulous and between 3 and 5 inches long. Found on sandy or gravelly plains, rocky slopes, or along washes. This is a Sonoran Desert endemic, stretching across the low desert portions of Baja California, Sonora, Arizona, and California. It is similar to *A. albicans* but can be distinguished by its habit of having many stems from the base as opposed to just a few and very tall compared to very short hoods. Average 88,560 seeds per pound. This is a known monarch host plant.



Figure 17: Photo by Max Licher

Horsetail milkweed (*Asclepias subverticillata*)

Spanish or Indigenous names: Talayote, Yierba lechosa,

Other names: None

Elevational range: 3,000 to 8,000 feet

Habitats: Found in open woodlands and grasslands, edges of streams and cienegas but can also be found in disturbed areas like roadsides and pastures.

Range: Found in Arizona, New Mexico, Utah, Nevada, Colorado, Wyoming, and Idaho, and south into Coahuila, Chihuahua and Sonora and as far south as Durango and Guanajuato.

Flowering time: June to September

Flower color: Corolla white to greenish-cream, the hoods white to yellowish with age.

Maximum height: Can reach up to 3 feet tall

Description: Rhizomatous plant with numerous upright stems bearing many long and narrow leaves with many umbels of white flowers emerging from the upper parts of the stem. The leaves are whorled with 3 to 4 found at each node and the leaf blades are very narrow and range from about 1 inch to 5 inches long. The umbels are small and crowded in the upper parts of the stem, with numerous very small flowers that are less than a quarter of an inch across. Produces pods that are upright and range from 3 to 4 inches long. This is a known monarch host plant.



Figure 18: Photo by Max Licher

Butterflyweed (*Asclepias tuberosa* spp. *interior*)

Spanish or Indigenous names: None

Other names: Butterfly milkweed

Elevational range: 3,000 to 8,000 feet

Habitats: Found in a range of habitats from woodlands and forests to riparian areas, cienegas, to disturbed sites

Range: Found in 41 US states and two Canadian provinces.

Flowering time: May through September

Flower color: Corollas and hoods, orange reddish-orange, or yellowish-orange

Maximum height: Can reach 2 feet tall

Description: This multi-stemmed upright plant without milky sap has a stem covered in hairs that branches at the top and terminates in several flat-topped umbels with bright orange, yellowish or reddish flowers. The leaves are alternate and crowded along the stem with leaves that are lance-shaped with spreading hairs. Produces pods that are upright and 3 to 5 inches long. The species is widely cultivated throughout the U.S. Average 69,560 seeds per pound. This is a limited monarch host plant.



Figure 19: Photo by Max Licher

Other Common Milkweeds

Eleven other milkweeds native to the Desert Southwest have a fairly wide distribution and occur in a variety of plant communities but are not yet widely available from commercial sources. These species could be targeted for special conservation efforts where they occur.

White-stem milkweed (*Asclepias albicans*)

Spanish or Indigenous names: Candelilla, Jumete, Mata candelilla, Yamato

Other names: Giant milkweed, Giant cane milkweed, Wax milkweed

Elevational range: Sea level to 2,500 feet

Habitats: This desert milkweed prefers rocky, north-facing slopes of granitic ranges, although it also occurs on the walls of volcanic craters.

Range: Western and southwestern Arizona, southeastern California and four Mexican states.

Flowering time: Mostly September to June but sometimes year-around, depending upon rains

Flower color: Creamy-white with black anthers, sometimes with a pink blush, fading yellow in ball-like clusters near and at the ends of tall stems

Maximum height: 7 to 9 feet tall

Description: A reed-like, erect plant that branches at its base into a few 5-9 foot tall, waxy, nearly leafless stems that produce umbels of pale flowers. The whitish to grayish-blue hue gives a waxy appearance to the wand-like stems, which have thread-like linear leaves arranged in pairs that are quickly shed with the onset of drought. The flowers, if pollinated and fertilized, produce 3 to 6 inch pendulous, canoe-shaped pods. Relatively new to commercial cultivation because of its vulnerability to freezes, it has been successfully grown in desert botanical gardens and outdoor museums for decades. It can be distinguished from its close kin in the same desert region, *A. subulata*, by its fewer, longer, thicker, more noticeably waxy-blue stems, the very short nectar cups of the flowers, and its preference for rocky uplands rather than fine-textured substrates on playas, dunes or low sandy hummocks. This is a known monarch host plant.



Figure 20: Photo by Mark Fishbein

Short-crown milkweed (*Asclepias brachystephana*)

Spanish or Indigenous names: Kacosi, Lechosillo, Inmortal pequeño

Other names: Bract milkweed

Elevational range: 3,500 to 6,500 feet

Habitats: Plains, mesas, grasslands, and some disturbed sites, especially along roadsides.

Range: Southeast Arizona and southwest New Mexico to West Texas and south as far as Zacatecas through Coahuila and Sonora.

Flowering time: Throughout the warm season, from May to September

Flower color: Petals purple, hoods white, the outer parts drying yellow brown

Maximum height: Less than 2 feet tall

Description: Upright plant heavily branched from the base, with umbels bearing few small, purple flowers with outer parts that dry yellow brown. The leaves are opposite and lance shaped, with a long narrowly tapering tip. The flowers are in small umbels from the middle to upper parts of the stem. The flowers are few per umbel and purple; each one is about a quarter of an inch. Some plants have numerous umbels, scattered throughout the upper parts of the stem, giving it a densely flowered appearance. Produces a squat pod with curved tapering tip, about 2-3 inches long and distinctively ribbed and purple and cream striped.



Figure 21: Photo by Patrick Alexander

Engelmann's milkweed (*Asclepias engelmanniana*)

Spanish or Indigenous names: None

Other names: None

Elevational range: 3,500 to 7,500 feet

Habitats: Found in canyons, in open woodlands, and grasslands

Range: Found in Arizona, New Mexico, eastern Colorado and Wyoming, across the Great Plains from Nebraska to Texas, and south to Sonora, Chihuahua and Coahuila.

Flowering time: June to September

Flower color: Yellowish-green with greenish-cream coronas; sometimes flushed with pale purple

Maximum height: Reaches 3 feet in height

Description: Upright and tall, unbranched or little-branched plant that can reach 7 feet tall with anywhere from several to many dense, round umbels born along the stems. Each bears yellowish-green flowers sometimes tinged with pale purple. It has alternate leaves that are very thin and drooping from 4-10 inches in length. Produces erect pods that can be 2.5 to 5 inches long and are smooth. This is a known monarch host plant.



Figure 22: Photo by Max Licher

Mahogany milkweed (*Asclepias hypoleuca*)

Spanish name: Talayote

Other names: New Mexico milkweed

Elevational range: 7,000 to 9,000 feet

Habitats: Shady understory of pine-oak woodlands, mixed conifer forests.

Range: Found in southern and southeastern Arizona and into southwestern New Mexico, then south into Sonora and Chihuahua.

Flowering time: June to September

Flowering color: Green to burgundy-colored corolla and corona; flowers on lax stalks form loose spheres

Maximum height: Can reach upwards of 2 feet

Description: Upright plant with an unbranched stem that is nearly hairless with 1 to several loose umbels near the top with flowers that are greenish to burgundy colored. The leaves are opposite and oval in shape, some with more pronounced oval while others have a pointed tip. The leaves are dark green on top and densely matted with white woolly hairs beneath. Produces pods that are erect and 2.5-5 inches long.



Figure 23: Photo by Mark Fishbein

Corn kernel milkweed (*Asclepias latifolia*)

Spanish or Indigenous names: None

Other names: Broadleaf milkweed

Elevational range: 2,500 to 7,000 feet, which includes its distribution into Kansas and Oklahoma.

Habitats: Found on plains and prairies, on rocky slopes in canyons, shortgrass and desert grasslands and along roadsides.

Range: Found Arizona, Utah, Colorado, New Mexico, Texas, Nebraska, Kansas and Oklahoma.

Flowering time: June through September

Flower color: Green petals with cream coronas that age yellow

Maximum height: 3 feet

Description: Upright plant with unbranched stem that can reach up to 3 feet tall. Stems are smooth and can be a half inch thick, with round, dense umbels along the stem mostly hidden by leaves, bearing large flowers that are green cream or yellow resembling corn kernels. The leaves are opposite and broadly oval to nearly round, closely attached to the stem, and ascending and overlapping leaves above. Generally, they are a medium green color with prominent venation. Produces pods that are 2-4 inches long and elliptic in shape. Seeds average 56,640 per pound. This species is frequently covered with ants which appears to be a detriment to monarch larvae.



Figure 24: Photo by Max Licher

Pine-Needle milkweed (*Asclepias linaria*)

Spanish name: Algodoncillo, Candelilla, Ceniza, Chiche de burra, Chichivilla cimarrona, Cinco negritos, Hierba del cuervo, Hierba de la pundaza, Mapiptza, Pinillo, Plumerillo, Romerillo, Solimañ, Teperomero, Torvisco, Talayote, Venenillo, Yamato, Yerba del indio.

Other names: Pine leaf milkweed, pine needle butterflyweed

Elevation: 3,000 to 6,000 feet

Habitats: In diverse habitats across Arizona, including rocky outcrops, arroyo bottoms and canyon slopes at the desertscrub or desert grassland-oak woodland transition.

Range: Found in the low deserts and sky islands of Arizona into southern California and south across 18 states in Mexico, especially in the highlands of the Mexican Plateau.

Flowering time: February to October but mostly late August to early October when summer rains are ample.

Flower color: White to pale greenish-white; somewhat small.

Maximum height: Sometimes up to 4 feet 6 inches tall.

Description: This rounded white flowered shrub has woody stems that produce numerous, alternate, needle-like linear leaves that reach 2 inches in length. The umbels are comprised of 10 to 30 white flowers in nearly rounded umbels near stem tips. Queen butterflies are known to lay eggs on the foliage but prefer other wildflowers as sources of nectar. The plants are unlike any other milkweed species and small individuals are commonly confused with juvenile pine trees. Known to be used as a monarch host plant but only occasionally; likely due to its high toxicity and milkiness.



Figure 25: Photo by Patrick Alexander

Tufted milkweed (*Asclepias nummularia*)

Spanish or Indigenous names: Talayote

Other Names: None

Elevational range: 4,000 to 5,500 feet

Habitats: Grassy meadows in oak savannas, pine-oak woodlands, and pinyon-juniper woodlands

Range: Found in southeastern Arizona, southwest New Mexico, and into west Texas and south in Sonora, Chihuahua, Durango and San Luis Potosi.

Flowering time: March and April

Flower color: Purplish-pink with the hoods pale pink

Maximum height: Generally less than 6 inches tall

Description: Very small perennial milkweed, often covered in short grayish woolly hairs that are lost through the summer. A small stalk of purplish-pink flowers. The leaves are opposite and oval to circular shaped, some having a small apex, with wavy edges and very visible white veins. The umbels grow much beyond the leaves and so they appear terminal, a little more than 1 inch wide, the flowers are small but distinctly purple-pink. The flowers are very small, but the purple-pink color along with the relatively flat-topped flowers make this one easy to identify when found. Produces pods that are upright and 1-3 inches long, tapering to a tip and covered in graying woolly hairs.



Figure 26: Photo by Mark Fishbein

Mojave milkweed (*Asclepias nyctaginifolia*)

Spanish or Indigenous names: Talayote, Yierba lechosa

Other names: Four o'clock milkweed

Elevation: 1,500 to 6,500 feet

Habitats: Roadsides and washes in desert grassland, semi-arid steppe, mesquite grassland, oak savannas, and piñon-juniper woodlands.

Range: Found throughout Arizona, Nevada, and California, and found south into Sonora and as far south as Durango.

Flowering time: April to October

Flower color: Pale green corollas, with greenish-cream to yellowish or rarely yellow-orange hoods.

Maximum height: Generally, about 1 foot in height but can reach 1.5 feet. Generally sprawling and low growing but can grow to be 2 feet across.

Description: Often sprawling, this plant branches only a few times from the base. The leaves are opposite with broad lance shaped leaves that are inconspicuously hairy, often with a wavy margin and often with distinctly reddish mid-veins. The umbels are borne along the stem and 2-3 inches across and have several large flowers that are green and cream or yellow with unusually tall, fluted coronas. Produces pods that are an elongated oval shape and 2-3.5 inches long. This is a known monarch host plant, particularly in fall after abundant summer monsoon rains.



Figure 27: Photo by Max Licher

Zizotes milkweed (*Asclepias oenotheroides*)

Spanish or Indigenous names: Talayote

Other Names: None

Elevation: From 3,000 to 6,500 feet

Habitats: Found in rocky and clayey soils in valleys and plains, along fields and thickets.

Range: Found in southeastern Arizona, New Mexico, and east to Colorado, Texas, Oklahoma, and south to Central America.

Flowering time: February to October

Flower color: Corolla pale green, corona cream, and green.

Maximum height: Can reach up to 1.5 feet tall

Description: Upright with 1 to many stems, bearing umbels in the axils of the leaves. The flowers are green and white with unusual long, narrow, fluted coronas. Leaves opposite, elliptic to oval shaped, and on a short petiole up to a half inch. Often with a reddish mid-vein and with wavy margins inconspicuously covered with small crinkled hairs. Produces pods 3-4 inches long with a rough outer surface. This is a known monarch host plant.



Figure 28: Photo by Patrick Alexander

Plains milkweed (*Asclepias pumila*)

Spanish or Indigenous names: None

Other Names: None

Elevational Range: From 2,000 to 7,000 feet

Habitats: Grows on calcareous or gypsum soils in prairies

Range: From the Trans-Pecos in west Texas and eastern New Mexico north across the Great Plains to the Dakotas

Flowering Time: June to September

Flower color: Corolla white with rose or yellowish-green tinge

Maximum height: Generally about one foot tall

Description: One to several stems branching from the base, emerging out of a taproot or slender root, the stems covered in minute hairs. The leaves are alternate in a spiral up the stem; the blades are leathery and threadlike up to 2 inches long. The flowers can be one to several umbels that emerge from the upper leaf axils, with up to 20 flowers in the umbel. The flowers are white to a purplish-rose on the outer parts and rose to yellowish-green on the interior. The upright pods are narrow with sparse hairs, these all 2.5-4 inches long. Known to be toxic to livestock.



Figure 29: Photo by Mark Fishbein

Texas milkweed (*Asclepias texana*)

Spanish or Indigenous names: None

Other Names: None

Elevational Range: From 5,000-6,000 feet

Habitats: Found in canyons and along arroyos in dry rocky regions.

Range: From central Texas west to the Edwards Plateau and south into Coahuila and the Chihuahuan Desert as far south as Durango.

Flowering Time: May through August

Flower color: Bright white corolla and corona

Maximum height: Can be up to two feet tall.

Description: Shrubby perennial with slender but strong stems that only branch at the base, the stems are slightly hairy and usually one to a few stems from the root crown. The leaves are opposite and oval to elliptic, tapering to a tip, with fine hairs along the midrib and veins below. The solitary umbels are at the end of the stem and have small white flowers. The upright pods are 3.5-5 inches long, smooth and spindle shaped, narrowing at either end.



Figure 30: Photo by Mark Fishbein

Rare Milkweeds

There are 19 other milkweed species native to the Desert Southwest; 17 are featured below. Their potential for habitat restoration efforts is limited because they are either uncommon, have a restricted distribution, or have strict habitat requirements.

Sand milkweed (*Asclepias arenaria*)

Spanish or Indigenous names: None

Other Names: None

Elevational Range: 500 to 6,500 feet

Habitats: Found primarily on sandy soils.

Range: Found in southeastern New Mexico and West Texas along the edge of the Chihuahuan Desert and north through the Great Plains to South Dakota, as well as south into Chihuahua.

Flowering Time: May through August

Flower color: Pale green with white to cream hoods and purple tinged

Maximum height: Less than two feet tall.

Description: Erect stout plant from a thick rootstock, the stems are usually solitary and covered in fuzzy whitish hairs with a flowering umbel at the end that has greenish cream flowers tinged with purple. Opposite leaves appear woolly, are broadly oval, and appear almost square with a prominent mid-vein, they are less than four inches long and three inches wide and tipped with a small sharp point. Few to several umbels grow out of the leaf axils in the upper half of the plant, often clustered tightly against the stem. The flowers are greenish with cream to white hoods. Produces a smooth upright pod that is 2.5-3.5 inches long and no more than an inch wide.



Figure 31: Photo by Patrick Alexander

Humboldt milkweed (*Asclepias cryptoceras ssp. cryptoceras*)

Spanish or Indigenous names: None

Other names: None

Elevational range: 2,000 to 8,000 feet

Habitats: Found on clay soils in piñon-juniper communities.

Range: Found in northern Arizona, Utah, Colorado, and Wyoming. The taxa's other subspecies is found in Nevada, and Idaho, while the species itself is found in all five states

Flowering time: May to July

Flower color: Pale green petals with deep reddish-purple hoods

Maximum height: Less than one foot

Description: A small perennial species with sprawling unbranched stems bearing near the tips one or more umbels of flowers with pale green petals and deep reddish-purple hoods. The opposite leaves are rounded to oval or rarely spade shaped, smooth and waxy on the surface with a yellow to slightly reddish margin and a very prominent mid-vein. The umbel is composed of several large flowers. Produces erect pods that are 2 to 3 inches long.



Figure 32: Photo by Patrick Alexander

Cutler's milkweed (*Asclepias cutleri*)

Spanish or Indigenous Names: None

Other Names: None

Elevational range: 4,000 to 5,500 feet

Habitats: Found on sand dunes in weakly stabilized sand.

Range: Found in northern Arizona, Utah, and Colorado.

Flowering time: April to June

Flower color: Purple with white hoods

Maximum height: Less than a foot

Description: Very low growing with slender stems. This delicate plant is nearly hairless and produces several few-flowered umbels with purple and white flowers. The leaves are opposite or nearly so, and narrow—about 3 inches in length. A few small flowers make up the less than 1-inch diameter umbels. Produces small pods 2-3 inches in length about a half inch wide. A narrow endemic found only on the Colorado Plateau.



Figure 33: Photo by Mark Fishbein

Nodding milkweed (*Asclepias elata*)

Spanish or Indigenous names: Oreja de mula, Señorita, Talayote

Other names: Texas milkweed

Elevational range: 4,000 to 7,500 feet

Habitats: Rocky streambeds and canyon and valley bottoms in oak savannas, pine-oak woodlands, and open piñon-juniper woodlands.

Range: Ranges from southeastern Arizona, across southern New Mexico, into southwest Texas, and south to Central America.

Flowering time: Late summer from July to September

Flowering color: Light green petals with yellow-brown to purple and white coronas; fragrant

Maximum height: 2 to 3 feet.

Description: Upright and mid-sized plant with smooth, waxy stems and leaves, bearing distinctively nodding umbels of flowers that are green and white with purplish or brownish tints. The leaves are opposite, and the bases are slightly clasping around the stem; the veins are notable for forming along the edge of the leaf. The leaves are large and elliptical to oval shaped with a slight tip, and as they get larger, they become wavy along the edges. The stem can be quite stout and terminate in the flowers in 1 to 3 or more nodding umbels of 6-12 flowers. The plant produces an upright pod that is 4-5 inches long. Has been confused taxonomically in the past with *A. glaucescens*, which ranges throughout mountainous regions of Mexico and is very similar in appearance, without the flowers.



Figure 34: Photo by Max Licher

Hall's milkweed (*Asclepias hallii*)

Spanish or Indigenous names: None

Other names: None

Elevational range: 6,000 to 8,000 feet

Habitats: Rocky slopes or roadsides in sagebrush steppe, piñon pine-juniper woodlands, ponderosa pine forests, and mixed conifer forests.

Range: Found in Gila and Coconino counties, as well as Nevada, Utah, Colorado, and Wyoming.

Flowering time: June to August

Flowering color: Dark pink-colored corollas with white coronas aging yellow

Maximum height: Can reach up to 1.5 to 2 feet tall

Description: Upright rhizomatous plants with reddish stems bearing few to several umbels at upper nodes of numerous dark pink and white flowers. The alternate leaves are about 3 to 6 inches long and lance shaped with a slightly rounded base and a long tapering tip; on a short petiole, the leaves can be less than a half-inch long. The leaves have a prominent mid-vein; with tight crinkly and matted hairs covering both stems and leaves. Produces an erect pod that is 3 to 5 inches long and about 1 inch wide.



Figure 35: Photo by Mark Fischbein

Dwarf milkweed (*Asclepias involucrata*)

Spanish or Indigenous names: None

Other names: White rim milkweed

Elevational range: 5,000 to 7,000 feet

Habitats: Shortgrass and desert grasslands and piñon-juniper savannas.

Range: Ranges across central Arizona and New Mexico, east to southern Colorado and extreme western Kansas and Oklahoma, and south through northwest Texas to Chihuahua, northeastern Sonora, Durango, Coahuila and Nuevo Leon.

Flowering time: Throughout the spring and early summer from March to July

Flower color: Green corollas, with white hoods that age yellow, with brown to purple keels.

Maximum height: Can reach up to a half-foot tall

Description: Spreading plant with several to many low stems with inconspicuous hairs and few to several umbels near the tops of stems with green and white flowers. The leaves are opposite and lanceolate in shape, with a long pointed tip. Produces pods that are erect and 2.5-5 inches long.



Figure 36: Photo by Mark Fischbein

Utah milkweed (*Asclepias labriformis*)

Spanish or Indigenous names: None

Other Names: None

Elevational Range: 3,500 to 7,000 feet

Habitats: Found in dry sandy soils along washes where there is moist subsoil

Range: Found in Utah from the southern Canyonlands region northeast into the Uinta basin.

Flowering Time: Late May through August

Flower color: Creamy yellow to yellowish-green or even cream colored.

Maximum height: Less than 18 inches tall

Description: Erect and upright perennial with smooth stems as it gets older. The umbels have a gently rounded flat top and bear a few to many yellowish flowers. The leathery leaves are opposite to almost opposite with the blades less than 6 inches long and never more than three-quarters of an inch wide, with a patch of hair at the base of the midrib. The faintly scented flowers are creamy yellow to yellowish-green and are each less than a half-inch across. The smooth pods are pendulous and 1-3 inches long. Cronquist, et al. (1984) noted that it is considered one of the most poisonous of all western range plants and is endemic to Utah.

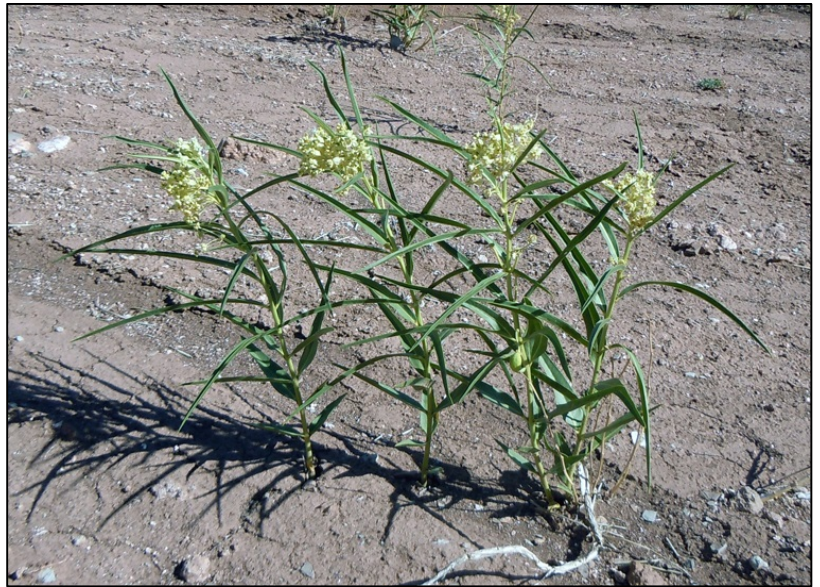


Figure 37: Photo by Mark Fishbein

Lemmon's milkweed (*Asclepias lemmonii*)

Spanish or Indigenous names: None

Other common names: Big-leaved milkweed

Elevational range: 6,000 to 7,500 feet

Habitats: Oak savannas, pine-oak woodlands, piñon-juniper woodlands, and ponderosa pine forests

Range: Found in southern Arizona in the Sky Islands and through Sonora and Chihuahua south to Jalisco.

Flowering time: June to September

Flower color: Cream corolla and corona, aging yellow

Maximum height: Can reach 5 feet tall

Description: A very large upright plant covered in stiff spreading hairs on leaves and its stout stem; the large round umbels have cream flowers. The leaves are opposite and can be quite large, some 9 inches long and 6 inches wide but generally 4-9 inches long and 3-6 inches wide. The leaves are a broad oval to ovate in shape. The few to several umbels are found near the top of the stem. Produces stiffly hairy upright pods that are 3-6 inches long.



Figure 38: Photo by Max Licher

Large seed milkweed (*Asclepias macrosperma*)

Spanish or Indigenous names: None

Other names: None

Elevational range: 3,500 to 6,000 feet

Habitats: Found in sandy soils along washes.

Range: Found across the canyon lands of southeastern Utah and into northern Arizona and northwestern New Mexico.

Flowering time: May through June

Flower color: Pale greenish to yellow with a delicate purple tinge

Maximum height: Low growing up to ten inches long

Description: Low growing perennial that sprawls, branching at the base, with a woody taproot. The entire plant is covered in dense hairs.

The leaves are alternate or approximate with very crenulated or wavy leaves that are acute at the tips; these are at most three inches long and less than three quarters of an inch wide, the upper surface with more sparse hair. The umbel of flowers are solitary and at the end of the stem; the flowers themselves are pale green on the outer parts and yellow with purple below on the inner. The smooth pods are upright and 1.5-2.5 inches long. The seeds are very large, befitting its name.



Figure 39: Photo by Mark Fishbein

Longhood milkweed (*Asclepias macrotis*)

Other names: Borderland milkweed, Four Corners milkweed, Longhorn milkweed, Long-eared milkweed

Elevational range: 4,500 to 7,000 feet

Habitats: Found in grasslands and open woodlands, often on limestone.

Range: Found in southeastern Arizona, west into New Mexico, Colorado, Oklahoma, and Texas, and south to Sonora, Chihuahua, and Coahuila. Strongly associated with mountains in and adjacent to the Chihuahuan Desert.

Flowering time: June to September

Flower color: Corolla cream, corona cream with brown to purplish keel.

Maximum height: Up to 1.5 feet tall

Description: Low growing, copiously-branched subshrub with small umbels of distinctive cream flowers with long twisted tips to the hoods that are purplish underneath. The leaves are opposite and attached directly to the stem, the blades narrowly linear, and 2-3.5 inches in length. The umbels are borne near the stem tips, have only a few flowers, and are about 1 inch across. Produces pods that are upright and 1.5-3 inches long.



Figure 40: Photo by Patrick Alexander

Slimpod milkweed (*Asclepias quinquedentata*)

Spanish or Indigenous names: Talayote

Other names: Tooth hood milkweed

Elevational range: 4,000 to 8,000 feet

Habitats: Grassy meadows and understories on slopes and in canyon bottoms in oak savannas, pine-oak woodlands, piñon-juniper woodlands, and up into ponderosa pine forests.

Range: Found in Arizona and New Mexico, south into Chihuahua, Durango, San Luis Potosí, Estado de Mexico, and Distrito Federal.

Flowering time: June to August

Flower color: Corolla purplish-green with very distinctive purplish-brown on the lower portion of the hoods, with white tips

Maximum height: Can reach up to 1 foot tall

Description: Small upright plant with long linear leaves and small nodding umbels from the upper part of the stem with green, white, and purplish flowers. The leaves are opposite and linear from 3 to 7 inches long. Produces a long slender pod 4-6 inches long and a half-inch across.

Very similar in appearance to *Asclepias subverticillata* when in a vegetative state. In rhizomatous colonies, the flowers are very different, with this species having few loosely held, green, white, and purple flowers, and *A. subverticillata* having dense umbels of white flowers.



Figure 41: Photo by Mark Fishbein

Rusby's milkweed (*Asclepias rusbyi*)

Spanish or Indigenous names: None

Other names: None

Elevation: 3,500 to 7,000 feet

Habitats: Riparian corridors in piñon-juniper woodlands, high semi-arid steppe, and ponderosa pine forests and mixed pine-fir forests.

Range: Found Arizona, Nevada, Utah, Colorado, and New Mexico.

Flowering time: June and July

Maximum height: 5 feet tall

Description: Single stemmed upright plant with smooth stems and several to many umbels held close to the stem at the upper nodes. Small pale green and sometimes purplish flowers. The leaves are irregularly alternate, with some appearing opposite—all very thin and narrow and attached to the stem, each between 3 and 6 inches long. Produces an upright pod about 3 inches long and 1 inch wide.

San Juan milkweed (*Asclepias sanjuanensis*)

Spanish or Indigenous names: None

Other names: None

Elevation: 4,000 to 7,000 feet

Habitats: Woodland openings on thin soils

Range: Northeastern Arizona and northwestern New Mexico.

Flowering time: April-June

Flower color: Corolla deep reddish purple, hoods white or yellow, rarely yellowish-orange.

Maximum height: Reaches several inches tall.

Description: Multiple short stems spread along the ground or ascend at an angle, with crowded lance shaped leaves 2 to 3 inches long with hairy margins. A small number of few-flowered umbels are produced toward the stem tips, with small purple and white flowers. Produces upright pods 2 to 3 inches long.



Figure 42: Photo by Mark Fishbein

Wheel milkweed (*Asclepias uncialis* both subspecies)

Spanish or Indigenous names: None

Other names: None

Elevational range: 5,000 to 7,000 feet

Habitats: Grasslands, found on sandy to rocky soils

Range: Found in Arizona, Wyoming, Utah, Colorado, Nebraska, Oklahoma and New Mexico, and south to Sonora

Flowering time: Early summer from May to June

Flower color: Corolla purplish-rose, hoods white

Maximum height: Less than 1 foot tall

Description: This low growing and sprawling plant branches from the base and is covered in short curly hairs with several small umbels of purplish-rose and white flowers at the end of the branches. The leaves are opposite and narrowly spade shaped to linear with short woolly hairs along the edges. Produces pods that are upright and around 2 inches long. Found on sandy to rocky soils. This species is found in very localized habitats from the Great Plains to southeastern Arizona. Known queen butterfly (*Danaus gillippus*) host plant.



Figure 43: Photo by Patrick Alexander

Woolly milkweed (*Asclepias vestita*)

Spanish or Indigenous names: None

Other Names: None

Elevational Range: 150 to 4,500 feet

Habitats: Found in dry plains and hillsides as well as desert canyons.

Range: Found throughout central California, as far south as the Mojave Desert.

Flowering Time: April through July

Flower color: Corolla yellow to pale green and the corona yellow or white.

Maximum height: Up to two feet tall

Description: Perennial with stout and densely hairy stems which are simple or branching from the base. The leaves are opposite and densely hairy, rounded at the base, spade shaped, and taper to a tip. The umbels are terminal or near the end of the stem, usually with several to many flowers, the flowers are yellowish-white and suffused with purple. The densely hairy and upright pods are 2-3 inches long, just over an inch wide and tapered at both ends. This is an endemic California species.

Green Comet milkweed (*Asclepias viridiflora*)

Spanish or Indigenous names: None

Other names: None

Elevational range: 5,000 to 7,000 feet

Habitats: In open pine forests, on plains and prairies and on hillsides in both rocky and sandy soils.

Range: Found in Arizona and New Mexico, then north across the Great Plains to the Dakotas and Montana, in addition to numerous other U.S. states and into Canada, as well as south into Coahuila, Chihuahua and Nuevo Leon.

Flowering time: May to August

Flower color: Corolla green with yellowish-green to purple tinged hoods

Maximum height: Up to 2 feet tall

Description: An upright unbranched plant with variable leaves ranging from almost linear to oval and several round umbels held close to the stem with small greenish flowers. The leaves are opposite. The umbels are found at 1 to many of the nodes from the middle to near the ends of the stems. Produces pods that are erect and 3 to 6 inches long with fine hairs on them. Average 78,110 seeds per pound.



Figure 44: Photo by Mark Fishbein

Welsh's milkweed (*Asclepias welshii*)

Spanish or Indigenous names: None

Other names: None

Elevational range: 5,500 to 6,500 feet

Habitats: Found on sand dunes in sagebrush, piñon juniper, and oak communities.

Range: Found in very northern Arizona and in extreme southern Utah.

Flowering time: Early summer to June or July

Flower color: Cream colored with a rose tinge, the hoods cream colored

Maximum height: Can be up to 3 feet tall

Description: This rhizomatous plant has upright, unbranched stems that are densely woolly with round, compact flowered umbels at upper nodes with hairy flowers that are cream colored with a rose tinge. The leaves are opposite and oval to ovate and densely woolly when young, becoming smooth as they age, especially below. Produces pendulous pods that are 1.5 to 3 inches.



Figure 45: Photo by Mark Fishbein

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