A Guide to Common Milkweeds of California

Milkweeds are a critical part of the monarch butterfly's life cycle. To protect monarchs in western North America, the Xerces Society for Invertebrate Conservation has launched an initiative to locate milkweed stands that serve as breeding areas for monarchs. If you know where milkweed grows, please help us by completing a brief survey at:

www.xerces.org/milkweedsurvey

The Xerces Society for Invertebrate Conservation

Monarch Joint Venture

NRCS Natural Resources Conservation Service

Introduction

This guide was created to support a web-based survey developed to gather information about milkweed stands in the western states that potentially serve as important monarch breeding areas. If you would like to contribute to our understanding of the migration and breeding dynamics of the western monarch by submitting information about milkweed occurrences in your region, you can complete the survey on the Xerces Society's website, at www.xerces.org/milkweedsurvey.

Fifteen species of milkweed are native to California; the majority of them are documented to be used as larval host plants by the monarch butterfly. This guide covers the six most common species.

Asclepias californica (California milkweed)
Asclepias cordifolia (purple milkweed, heartleaf milkweed)
Asclepias eriocarpa (woollypod milkweed, Indian milkweed)
Asclepias fascicularis (narrow-leaved milkweed)
Asclepias speciosa (showy milkweed)
Asclepias vestita (woolly milkweed)

A profile of each of these species includes descriptions of flowers, leaves, and seed pods, accompanied by photos and distribution maps. Supporting these profiles is a simple guide to identifying milkweeds based on their distinctive flowers and fruits. In addition to these native species, we have included a profile of *Asclepias curassavica* (tropical milkweed), a nonnative species that is widely planted in gardens and might become established in some of California's natural areas.

To document the distribution of available monarch breeding habitat, it is not necessary to distinguish one milkweed species from another. However, if there is a need to collect seed from or monitor populations of any particular milkweed species in the future, it will be useful to have information on the distribution of individual species.

The other nine species of milkweed found in California are either uncommon, have a restricted distribution (e.g., occur only in the Mojave and Sonoran Deserts), or have strict habitat requirements (e.g., serpentine soil). If you have seen milkweed plants that do not match the six species in this guide and would like to identify them, you can view photos of the remaining nine species on CalPhotos (http://calphotos.berkeley.edu/flora/) and view their county-level distribution using the USDA PLANTS database (http://plants.usda.gov). The species are *A. albicans* (whitestem milkweed), *A. asperula* (spider milkweed), *A. cryptoceras* (pallid milkweed), *A. erosa* (desert milkweed), *A. latifolia* (broadleaf milkweed), *A. linaria* (pineneedle milkweed), *A. nyctaginifolia* (Mojave milkweed), *A. solanoana* (serpentine milkweed), and *A. subulata* (rush milkweed).

This survey is being conducted by the Xerces Society for Invertebrate Conservation. The Society's milkweed conservation work is supported by the Monarch Joint Venture and the USDA Natural Resources Conservation Service.

The Xerces Society
for Invertebrate Conservation

The Xerces Society for Invertebrate Conservation is a nonprofit organization that protects wildlife through the conservation of invertebrates and their habitat. Established in 1971, the Society is at the forefront of invertebrate protection worldwide, harnessing the knowledge of scientists and the enthusiasm of citizens to implement conservation programs. The Society uses advocacy, education, and applied research to promote invertebrate conservation.

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Guide prepared by Brianna Borders.
Editing and layout by Matthew Shepherd.

Cover photos
Top: California milkweed (*Asclepias californica*), © Brianna Borders, The Xerces Society for Invertebrate Conservation; bottom left: monarch (*Danaus plexippus*) adult, © Eric Eldredge; bottom right: monarch caterpillar, © William M. Ciesla, Forest Health Management International, Bugwood.org.

Tips for Milkweed Identification

Unless you are already familiar with the native milkweeds of your region, it's unlikely that you'll be able to identify different species if they are not flowering or bearing fruits. Milkweed flowers and fruits are very distinctive and can be easily recognized, allowing confident identification when they are present.

Flowers

Milkweed flowers are arranged in clusters. Depending on the species, the stalk that bears the flowers can be either erect or drooping. The showy, upper part of each flower, called the **corona**, consists of five hoods, where nectar is stored. The shape of the hoods is variable between species. Five petals, which together are called a **corolla**, form the lower part of the flower and in most species, are bent backwards.

Fruits

Milkweed fruits ("pods") are also very distinctive though they are variable in size and shape between species. When the fruits are mature, they split open lengthwise, releasing the seeds. Each seed is attached to fluffy hairs that aid in wind dispersal.

Milky sap

Milkweeds are named for their milky, latex sap, which oozes from the stems and leaves when plants are injured. Milkweeds are not the only plants that have milky sap, but in combination with the unique flower shape, this can help to positively identify a milkweed plant. To check for the sap, tear off a small piece of leaf to see if it oozes from the torn area. Avoid any contact of the sap with your skin, eyes, or mouth.

Photo: Gary A. Monroe @ USDA-NRCS PLANTS Database

Pallid milkweed (*Asclepias cryptoceras* ssp. *cryptoceras*): The corona is purple and the corolla is pale green.

Photo: Mary Ellen (Mel) Harte, Bugwood.org

Narrow-leaved milkweed (*Asclepias fascicularis*): The corona is white and the corolla is pink.

Photo: Eric Eldredge, USDA-NRCS

Showy milkweed (*Asclepias speciosa*): This species' fruits have a woolly texture and sometimes have warty projections.

Photo: John Anderson, Hedgerow Farms

Narrow-leaved milkweed (*Asclepias fascicularis*): This species' fruits are hairless and have an elongated, tapered shape.

Asclepias californica

California milkweed

Distribution in California
Widely distributed across the southern and coastal areas, but more frequent in western areas of the state. Endemic to California.

Source: USDA-NRCS PLANTS Database

Habitat description
Flats and grassy or brushy slopes in many plant communities, including valley grassland, foothill woodland, pinyon-juniper woodland, and chaparral.

Flowering period
April – July

Plant characteristics
Growth form
- Up to 3 feet (90 cm) tall
- Sometimes grows in multi-stemmed clumps that are several feet wide

Flowers
- Corona pink to purple
- Corolla pink to purple

Stems
- Densely hairy

Leaves
- Oval-shaped
- Opposite each other on the stem
- Densely hairy

Fruits
- Up to 4 inches (10 cm) long
- Densely hairy


Photo: Brianna Boarders, The Xerces Society for Invertebrate Conservationv


Photo: Bobby Gendron, Butterfly Encounters


Photo: © 2011 Jean Pawlek

Asclepias cordifolia

purple milkweed
heartleaf milkweed

Distribution in California
Found in hills and mountains of the northern and central parts of state.

Source: USDA-NRCS PLANTS Database

Habitat description
Dry, rocky areas in woodlands, chaparral, and evergreen forest in foothills and lower montane zone.

Flowering period
May – July

Plant characteristics
Growth form
- Up to 2 feet (60 cm) tall

Flowers
- Corona pink or white
- Corolla dark pink to dark purple

Stems
- Mostly hairless

Leaves
- 2 – 4 inches (5 – 10 cm) long
- Heart-shaped; wider at the base and tapering to the tip
- Attached directly to the stem
- Opposite each other on the stem
- Mostly hairless
- Waxy coating gives them a frosted appearance

Fruits
- 2 – 3 inches (5 – 8 cm) long
- Lance-shaped, tapering gradually to a sharp point
- Smooth-textured
- Hairless


Photo: Dr. Robert T. and Margaret Orr © California Academy of Sciences


Photo: John Anderson, Hedgerow Farms


Photo: John Anderson, Hedgerow Farms

Asclepias eriocarpa

woollypod milkweed
Indian milkweed

Distribution in California
Scattered across much of state but not in higher mountains.

Source: USDA-NRCS PLANTS Database

Habitat description
Dry, rocky areas in many plant communities, including valley grassland, chaparral, and foothill woodland. Also grows along stream banks and roadsides.

Flowering period
May – October

Plant characteristics
Growth form
- Up to 3 feet (90 cm) tall

Flowers
- Corona white or cream, sometimes tinged with purple
- Corolla cream or yellow
- Buds densely hairy, but may become less hairy with age

Stems
- Densely hairy, but may become less hairy with age

Leaves
- Opposite each other on the stem or in a whorled pattern around stem
- Densely hairy, but may become less hairy with age
- Edges sometimes wavy

Fruits
- Fat, tapering to a blunt tip
- Densely hairy


Photo: Claudia Street, Glenn County RCD


Photo: Claudia Street, Glenn County RCD


Photo: Brother Alfred Brousseau, St Mary's College

Asclepias fascicularis

narrow-leaved milkweed

Distribution in California
Widespread; found across most of state.

Source: USDA-NRCS PLANTS Database

Habitat description
Dry to moist soil in open, sunny areas including grasslands, foothill woodlands, chaparral, wetlands, riparian zones, forest clearings, and roadsides.

Flowering period
May – October

Plant characteristics
Growth form
- Up to 3 feet (90 cm) tall

Flowers
- Corona white
- Corolla pink

Leaves
- 2 – 5 inches (5 – 12 cm) long
- Narrow
- Numerous
- Opposite each other on the stem or in a whorled pattern around the stem

Fruits
- 2 – 4 inches (5 – 10 cm) long
- Narrow
- Smooth-textured
- Hairless


Photo: John Anderson, Hedgerow Farms


Photo: Mary Ellen (Mel) Harte, Bugwood.org


Photo: John Anderson, Hedgerow Farms


Photo: Eric Eldredge, USDA-NRCS

Asclepias speciosa

showy milkweed

Distribution in California
Hills and mountains of northern half of state.

Source: USDA-NRCS PLANTS Database

Habitat description
Dry to moist soil in open, sunny areas including wetlands, meadows, savannah, forest clearings, and along roadsides, railways, and waterways.

Flowering period
May – September

Plant characteristics
Growth form
- Up to 4 feet (120 cm) tall
- Stout and erect
- Sometimes grows in stands of several hundred plants

Flowers
- Corona pink or white
- Corolla pink
- Hoods of corona very elongated; form 5-pointed star

Stems
- Covered in soft hairs, often matted

Leaves
- 3 – 7 inches (8 – 18 cm) long
- Broad (1.5 – 3 inches [4 – 8 cm])
- Opposite each other on the stem
- Covered in soft hairs, often matted

Fruits
- 2 – 3 inches (5 – 8 cm) long
- Covered in dense, woolly hairs
- Some have warty projections


Photo: Mary Ellen (Mel) Harte, Bugwood.org


Photo: Rod Gilbert


Photo: Eric Eldredge, USDA-NRCS


Photo: Brianna Borders, The Xerces Society for Invertebrate Conservation

Asclepias vestita

woolly milkweed

Distribution in California
Found in southern half of state; endemic to California.

Source: USDA-NRCS PLANTS Database

Habitat description
Valley grassland, chaparral, and foothill woodland on dry plains and hillsides and in canyons.

Flowering period
April – July

Plant characteristics
Growth form
- Up to 2 foot (60 cm) tall

Flowers
- Corona yellow or white
- Corolla yellow or pale green
- Buds densely hairy, but may become less hairy with age

Stems
- Densely hairy, but may become less hairy with age

Leaves
- Opposite each other on the stem
- Densely hairy, but may become less hairy with age

Fruits
- Yellowish color
- Less than 2.5 inches (7 cm) long


Photo: Bobby Gendron, Butterfly Encounters


Photo: Bobby Gendron, Butterfly Encounters

Asclepias curassavica

tropical milkweed
bloodflower

Photo: Larry Allain @ USDA-NRCS PLANTS Database

Photo: Richard A. Howard Image Collection, courtesy of Smithsonian Institution

Tropical milkweed is not native north of Mexico, but, due to its showy flowers and its ability to attract egg-laying monarchs, it has been widely planted in gardens. In Florida, the species has escaped from gardens and become established in natural areas. Scientists are concerned that this nonnative milkweed has negative impacts on monarchs because, unlike most North American native milkweeds, it will have foliage year-round when growing in areas with mild winters and adequate moisture. This can cause monarchs to lay eggs outside of their regular breeding season or persist in areas longer than they normally would, disrupting their migratory cycle. Year-round persistence of milkweed has also been found to result in dramatically higher parasitism rates in monarchs, and thus lower monarch survival. A better understanding of where this milkweed occurs in the landscape may facilitate study of its potential impacts or aid early eradication efforts.

Distribution
Documented in California; the extent of its occurrences in other western states is generally unknown. Also documented in Florida, Hawaii, Louisiana, Tennessee, and Texas.

Habitat description
Typically planted in gardens. Prefers moist soils. Colonizes disturbed sites.

Flowering period
Potentially blooms several times between spring and fall.

Plant characteristics
Growth form
- Up to 3 feet (90 cm) tall

Flowers
- Corona yellow/orange
- Corolla bright red

Leaves
- 5 – 6 inches (13 – 15 cm) long
- Narrow; pointed at both ends
- Opposite each other on the stem

Fruits
- 3 – 4 inches (8 – 10 cm) long
- Spindle shaped, with a smooth texture

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