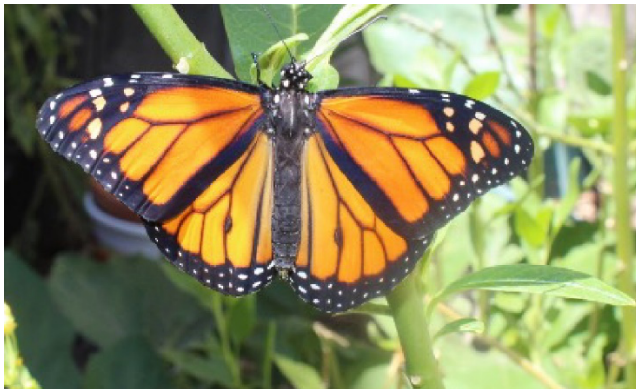




Monarch Butterfly Garden Habitat Guide

A monarch butterfly habitat is enjoyable to have and helps the iconic butterfly survive and thrive. It's also a fun multi-generational family project. The first part of this guide is about the residential monarch butterfly, the one that lives in your garden. The second part is how to create and maintain a monarch garden habitat for them.



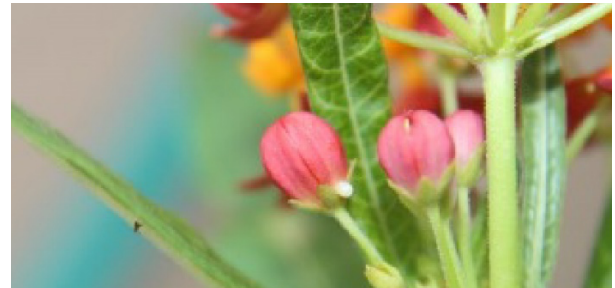
Monarch Butterfly: Four Life Cycle Stages

The life cycle of the Monarch comprises four distinct stages: egg, larva (caterpillar), pupa (chrysalis), and adult. The duration of each stage may vary significantly based on environmental factors, including temperature, humidity, and light exposure. The following timeline serves as a general guideline, but specific development times are influenced by these abiotic conditions.

Egg

The initial stage of development lasts approximately 4 to 7 days. During this period, a female monarch butterfly deposits a single egg, typically on the underside of a milkweed leaf. In some instances, the female may lay one or more eggs on the upper or lower surfaces of leaves, as well as on the plant's stalk or flower buds, contingent upon the availability

of healthy milkweed foliage on the host plant.

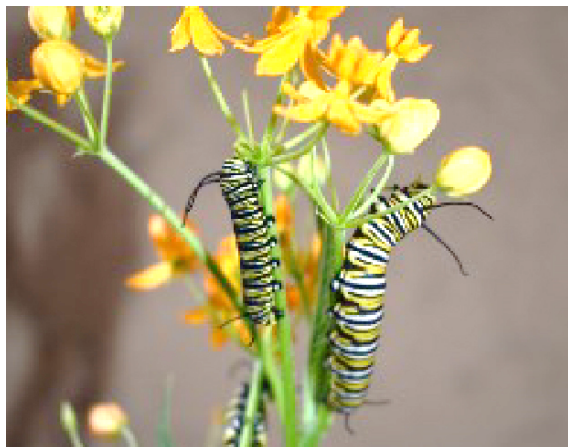


The egg is about the size of a pin head (0.9mm wide and 1.2mm high) and a light cream color. As the developing caterpillar matures within the egg, the head becomes visibly black, indicating the caterpillar is ready to hatch. The newly emerged larva is exceedingly small and often barely visible to the naked eye. It typically exits the egg headfirst and consumes the eggshell as its initial meal. If the eggshell is no longer observable, it is likely that the caterpillar has ingested it and progressed to subsequent feeding activities.

Caterpillar

The second stage of development lasts approximately 10 to 14 days. During this phase, the caterpillar exhibits distinctive yellow, black, and white striping and experiences a remarkable increase in size, typically doubling its mass daily through the consumption of milkweed, its exclusive host plant. The caterpillar can increase its body mass by approximately 2,000 times its initial weight. Growth occurs through a series of five molts, during which the caterpillar sheds its exoskeleton. Each developmental stage between molts is referred to as

an "instar," with the first instar representing the newly hatched caterpillar.



The fifth instar represents the largest developmental stage among the instars. During this phase, the caterpillar prepares to form a light green pupa, which subsequently develops into the chrysalis, characterized by a translucent exterior. The monarch initiates the pupation process while still in the caterpillar stage. Within the caterpillar are structures known as imaginal discs, which will differentiate into the adult's organs and various internal and external structures, illustrating the phenomenon of complete metamorphosis. Following this, the caterpillar actively seeks a suitable location to construct its chrysalis.

Have some hiding places near the milkweed so the caterpillar doesn't have to go far.

A caterpillar traveling a far distance risks being seen by predators like lizards or birds.

The caterpillar will look for places like fences, boxes, bushes, piles of wood, and underneath patio furniture. You can also be creative and build or put something together. A caterpillar can crawl up the side of a house or tree if there's nothing else to stop it from moving forward.

Upon locating a suitable site for pupation, the caterpillar produces a silk button and subsequently suspends itself upside down by its prolegs, adopting a "J" shape for a duration of approximately 12 to 24 hours. During this period, significant internal transformations continue within the caterpillar's exoskeleton.



5th instar, hanging in J shape, transforming.

As the fifth instar caterpillar hangs in the "J" shape, it begins to straighten, losing its distinctive posture. The initial indication that the final molt is imminent is the subtle twitching of the antennae located at the top of the caterpillar's head. Following this, the exoskeleton splits at the head, and the body begins to undulate, causing the skin to move upward towards the silk button, revealing the vibrant jade green pupa.

The pupa vigorously rotates as it secures the hooks of the protruding black cremaster into the silk pad, effectively anchoring itself. During this dynamic process, the caterpillar's skin is often expelled from the pupa at the silk pad end, and movement slows. The transparent material of the chrysalis subsequently hardens, and distinct gold embellishments emerge on its surface. This intricate transformation is a remarkable phenomenon to observe.

Chrysalis



Adult monarch in clear chrysalis, ready to eclose (emerge).

The third stage of the life cycle typically lasts between 10 to 14 days, although this duration is influenced by climatic conditions. During this period, enzymes initiate the dissolution of the caterpillar's internal tissues. Once these enzymes have hydrolyzed the tissues into a green fluid, the imaginal discs utilize this substrate to form the external structures of the butterfly, including the head, thorax, wings, and legs, as well as various internal organs.

Imaginal discs are clusters of cellular structures located within the larval form of insects, specifically

caterpillars, that are integral to the process of metamorphosis. This mechanism is fundamental to the transformation of caterpillars into butterflies, representing a key aspect of their developmental biology. **This is the secret of butterfly metamorphosis.**

Adult

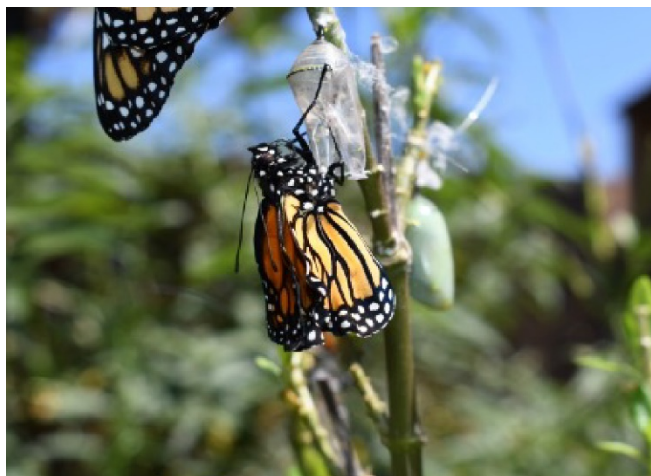
The adult stage of the butterfly's life cycle typically lasts between 2 to 6 weeks. Emergence from the chrysalis occurs with minimal prior indication; the adult initiates this process by puncturing the chrysalis with a leg, creating an opening through which it exits headfirst. Upon emergence, the adult clings to the chrysalis, maintaining an upright position with its head elevated. The wings are initially soft and pliable at the time of emergence, requiring an hour or more to harden fully.

Avoid disturbing or handling the butterfly immediately after it emerges from the chrysalis. If its wings do not harden properly, it may be unable to fly, which is essential for locating food, ultimately jeopardizing its survival.

San Diego County has been a historical overwintering site for the migrating monarch as part of the annual U.S. Monarch Western migration.

The California migration population collapsed in 2020 - a 99.9% decline from 1997 - and fewer migrators are seen in San Diego County since then. There has been a slight state rebound, but nothing like past numbers.

Hemolymph, a dark red liquid containing proteins, circulates from the monarch butterfly's abdomen into the wings as the insect gently oscillates. This movement facilitates the expansion of the wings. Eventually, excess hemolymph is expelled, resulting in a red stain on the ground. Once the wings are fully expanded and functional, adult monarch butterflies take flight to seek nectar, locate a mate, and begin the cycle again.



New adult with wings drying and expanding.

The sexual dimorphism of adult monarch butterflies is readily observable, particularly when the wings are extended and flat (At the top of page one, a male specimen is depicted). Adult males are generally larger and exhibit distinctive black spots located within the vein structures of each hind wing. In contrast, females possess broader black wing veins and lack these characteristic spots.

Two Major Monarch Butterfly Predators

In recent years, two primary predators of monarch butterflies have become increasingly prevalent, prompting heightened vigilance among monarch gardeners. Current management strategies do not allow for the complete eradication of these predators, as the use of pesticides or other toxic substances is discouraged in butterfly and pollinator gardens.

1. Tachinid Fly



Adult tachinid fly.

The parasitic tachinid fly represents a significant

threat to monarch butterflies. Over 400 species of tachinid flies have been identified in California, with *Lespesia archippivora* being the predominant species affecting monarch caterpillars in San Diego County. This small, red-eyed fly lays its eggs on the dorsal surface of monarch caterpillars, typically behind the head, making it difficult for the caterpillar to dislodge the eggs.

Upon hatching, the tachinid larvae penetrate the caterpillar and consume its non-vital internal tissues. The caterpillar may exhibit normal behavior until the larvae consume critical organs, ultimately leading to the caterpillar's death in the characteristic "J" position or as a pupa within the chrysalis.

Indicators of tachinid fly infestation include:

1. Incomplete growth, with the caterpillar failing to achieve the full fifth instar before pupation, often stopping at the third or fourth instar.
2. The presence of unusual reddish spots in infected caterpillars, visible externally while the caterpillar hangs in the "J" position.

A definitive sign of tachinid infestation is the appearance of white "strings" produced by the larvae hanging from the deceased caterpillar or chrysalis. These strings facilitate the larvae's descent to the ground. The number of strings indicates the quantity of larvae that had infested the caterpillar. After dropping to the ground, the larvae burrow into the soil to pupate, completing a four-stage life cycle similar to that of the monarch.

Adult tachinid flies primarily feed on nectar, pollen, and the sweet "honeydew" excreted by oleander aphids, which ingest sap from milkweed. Controlling oleander aphid populations can reduce the attraction of tachinid flies.

Tachinid flies naturally occur in gardens and can provide biological control for various pests, including larvae of beetles, butterflies, moths, centipedes, crickets, earwigs, grasshoppers, true bugs, and other flies. This dual role as both beneficial insects and predators of monarch caterpillars highlights the importance of implementing an integrated pest management (IPM) approach to maintain a healthy ecosystem of natural enemies and pollinators.

In the wild, the survival rate of monarch butterflies is approximately 5%. While it is unrealistic to expect a 100% survival rate in a garden setting, efforts that exceed this baseline are vital for the conservation of monarch populations and can provide rewarding experiences for gardeners.



Strings show tachinid infestation. Brown tachinid chrysalis.

Read more here:

https://ipm.ucanr.edu/mitigation/protect_beneficials.html

In nature, the monarch butterfly survival rate is only about 5%. You will not have a 100% survival rate, but if your monarch garden habitat success rate can exceed this 5%, then you will be doing important work for the monarch butterfly's survival while having fun.

2. *Ophryocystis elektroscirrha* (OE)

Ophryocystis elektroscirrha (OE) is a protozoan parasite that poses a substantial threat to monarch butterfly populations. OE spores can adhere to the body of an infected adult monarch or be transmitted from an infected male to a female during copulation. Females may inadvertently deposit one or more microscopic spores onto milkweed leaves while laying eggs. Consequently, unsuspecting caterpillars may ingest these spores, leading to infection.

Caterpillars with mild infections may appear and behave normally, complicating early detection. However, OE spores can become visually evident

within the still-green pupae of infected caterpillars days prior to the adult's emergence. Monarchs with high levels of OE often exhibit signs of weakness, underdevelopment, and reduced size. These individuals may also experience flight difficulties. In severe cases, adults may become trapped within the chrysalis due to wing deformities, preventing successful eclosion. Additionally, if the two sections of their proboscis fail to fuse properly, affected monarchs may be unable to feed, ultimately leading to mortality.

According to data from organizations monitoring OE infestation rates in the U.S., approximately 30% of California monarchs exhibit heavy infestations of OE (source: monarchparasites.org).

Native vs Non-Native Milkweed

Controversy and Compromise

The debate over the use of native versus non-native milkweed species in monarch butterfly gardening has persisted for several years. As more research is conducted, monarch gardeners have been able to find a compromise.



Bee on narrowleaf milkweed flower. hy6

Historically, prior to the introduction of non-native milkweed species in San Diego County and other warm-weather monarch overwintering sites in the United States, only migratory monarch butterflies were present year-round; there were no resident populations. Southern California's common native

milkweed is the Narrowleaf milkweed (*Asclepias fascicularis*).

Both native milkweed and non-native milkweed can host spores of the protozoan parasite *Ophryocystis elektorscirrha* (OE). However, native milkweed typically dies back in winter, meaning that only non-native milkweed is available for monarchs during the winter and early spring, prior to the emergence of dormant native milkweed species. During this dormant period, only the roots of native milkweed remain viable.

It is a misconception that only non-native milkweed poses a risk to monarchs regarding OE. Although tropical milkweed (*Asclepias curassavica*) is often singled out as problematic, any milkweed species can harbor OE spores deposited by infected adult monarchs, leading to potential infections in caterpillars that consume them.

The negative perception of tropical milkweed is frequently held by those advocating exclusively for native Narrowleaf milkweed, who may be unaware that OE spores can be found on both native and non-native milkweed. The prominence of tropical milkweed in the commercial market contributes to its frequent scrutiny.

A compromise has been proposed to mitigate OE risk associated with non-native milkweed. This involves cutting back non-native plants to approximately six inches in height, simulating the winter dormancy of native species. This practice aims to prevent infected monarchs from landing on the plants, thereby reducing the likelihood of egg deposition by females and minimizing the spreading of existing OE spores. It is also crucial to dispose of plant debris carefully, as OE spores may adhere to it. When bagging cut stalks, care should be taken to prevent the dispersal of any spores.

This meticulous approach is vital for managing OE spores effectively. Depending on the growth rate of the plants, multiple cuttings may be necessary throughout the winter.

Gardeners should exercise discretion when pruning, as there are no strict guidelines regarding the amount to be cut or the timing of regrowth. Climate change complicates predictions regarding seasonal cycles, so monitoring the dormancy of native milkweed can provide helpful guidance. Observing native milkweed at local nurseries can serve as a reference if none is present in the gardener's own habitat.

Late fall is a suggested time to cut back milkweed, allowing it to grow back near the beginning of February.

What's important for many monarch gardeners is to have healthy monarchs, healthy milkweed, and healthy nectar plants, rather than having a particular variety of milkweed.

If you are indecisive about what kind of milkweed in your monarch garden you want, you can choose to leave it up to the monarchs that live there. It has been observed by monarch gardeners that some females prefer laying eggs on native milkweed and others on non-native in their garden. Figuring out which milkweed the monarchs in your garden prefer means simply planting varieties of both native and non-native over the season and observing which the monarchs like. You can take notes while trying different varieties. Then you'll know what's best for your garden and your monarchs and plan accordingly. You can adjust your garden whenever you observe changes.

A reason monarch gardeners who want a native only garden choose to have both native and non-native milkweed at the monarch season's start is because

native milkweed is slow-growing and takes some time to come back from winter dormancy and grow large enough to become food. Having non-native milkweed fills this time gap by giving early monarchs a place to lay eggs. The non-native milkweed will eventually be eaten. Some monarch gardeners care only about having the beautiful butterfly in their garden. Others who have found out how difficult survival is for monarchs in general for both the “residential” and the “migratory” populations, also try to help the monarch survive.

More research can be read here:

<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=55375&sharing=yes>

Many monarch gardeners keep up with the latest information about the eastern and western monarch migrations on various websites like Journey North (journeynorth.org).

Create Your Monarch Garden Habitat

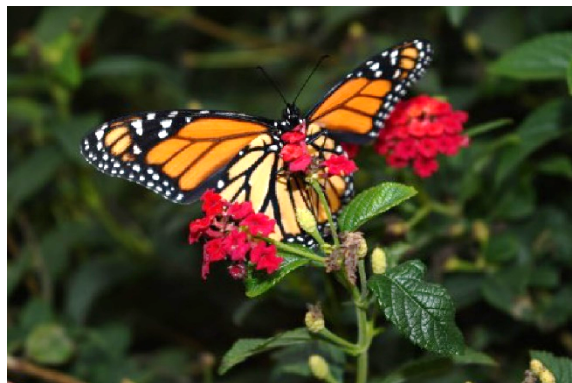
1. Ground and containers
2. Exposure - full sun best
3. Shelter from wind and rain
4. Milkweed
5. Nectar plants - with flat flowers like landing pads
6. Water source - insect watering dish or puddling area or dish/optional
7. Maintenance plan and schedule
8. No pesticides, herbicides, fungicides or other toxins should be used in or near a pollinator garden. Use such things as hands, cotton swabs, hose, and natural pest controls.

Contact the San Diego Master Gardener hotline for further information (858) 822-6910

Make sure to have flowering nectar plants that bloom at different times during the monarch gardening season.

A successful monarch butterfly habitat requires the presence of both milkweed and flowering nectar plants. While milkweed is essential for larval development, adult monarchs rely on nectar sources for sustenance. If only milkweed is available, adults may search for alternative flowering plants to feed on. In the absence of suitable nectar sources, these butterflies may leave the area and may not return, ultimately jeopardizing the reproductive cycle of the population. Without mated female monarchs to lay eggs, the viability of the monarch garden diminishes, unless there are nearby plants that can attract them.

To support a continuous supply of nectar for monarchs and other butterflies throughout the gardening season, it is critical to include flowering plants that bloom at various times: early, mid, and late season. This diversity ensures that there are always flowers available for feeding. Researching the blooming periods of desired flowering plants online can help in selecting species that will provide consistent nectar availability.



Monarch on 'Lantana camara' for nectar.

When establishing milkweed in garden beds rather than containers, it is advisable to plant them in clusters of at least three or more. Similarly, maintain

a grouping of at least three pots when using containerized plants. This grouping strategy enhances the protection of caterpillars by minimizing their exposure to predators while they move between plants.

Milkweed is the only monarch host plant.

Monitor the quantity of milkweed regularly, including those started from seed, to ensure a sufficient supply. As the exclusive host plant for monarch caterpillars, an adequate milkweed population is critical to prevent starvation. Additionally, maintain a contact list of local vendors and neighboring gardeners with monarch habitats who may have surplus milkweed available in case of emergencies.

Planting Milkweed and/or Flowering Nectar Plants in the Ground

When transplanting a milkweed or flowering nectar plant from a container into the ground, begin by digging a hole that is approximately twice the width and depth of the root ball. Add a small amount of water to the bottom of the hole to ensure adequate hydration. Carefully remove the plant from its container, taking care not to damage the roots.

Position the plant in the hole so that the crown—where the stem meets the root—is slightly above the surrounding soil level. Backfill the hole with soil, firming it gently around the plant. Immediately water the newly transplanted specimen to ensure proper soil moisture.

It is essential to maintain consistent moisture levels for all newly planted specimens, including drought-tolerant species, until they are fully established. Once established, adhere to the recommended watering schedule based on plant requirements. For seeds, refer to the instructions on the seed packet.

Always ensure that the plant receives adequate water, particularly in regions experiencing prolonged drought conditions. **Remember that low water does not equate to no water at all.** Familiarize yourself with the signs of plant dehydration, and consider using soil moisture meters to monitor soil conditions effectively.



Photo: Judith Wolinsky

Milkweed Plants and Seeds

The badge of success for a thriving monarch butterfly garden is the presence of milkweed plants that have been defoliated by caterpillars. This outcome contrasts sharply with traditional gardening practices, which often prioritize the aesthetic appeal of intact foliage. In this context, you are effectively cultivating a "salad" of milkweed for the nourishment of monarch caterpillars.

When a milkweed stalk is broken, a milky white latex is released, which is the source of the plant's name. This sap contains toxic compounds that serve as a defense mechanism, rendering both caterpillars and adult butterflies unpalatable to many predators. If latex comes into contact with your skin, it is important to wash it off immediately and avoid touching your eyes, as the latex can cause irritation. To minimize risk, wearing gardening gloves and protective eyewear is advisable when handling milkweed.



Asclepias fascicularis Native Narrowleaf Milkweed
Photo: Judith Wolinsky

You can start your monarch butterfly garden using either commercially available nursery plants or seeds. While seeds may require an extended germination period, they are generally more economical and have the potential to develop into larger plants over time. Additionally, certain seed varieties may offer unique characteristics not available in local nurseries.

When planting from seed, it is feasible to sow multiple seeds in a large container; however, care should be taken to avoid overcrowding, as this can lead to root binding and suboptimal growth. For transplanting container-grown milkweed, it is advisable to use a container of at least one gallon in size or to plant directly into the ground to ensure adequate space for root development.

San Diego County's Six Main Native Milkweeds

The six main San Diego County native milkweeds are:

1. *Asclepias fascicularis* (Narrowleaf)
2. *Asclepias eriocarpa* (Indian/Woolypod)

3. *Asclepias californica* (California)

4. *Asclepias subulata* (Desert)

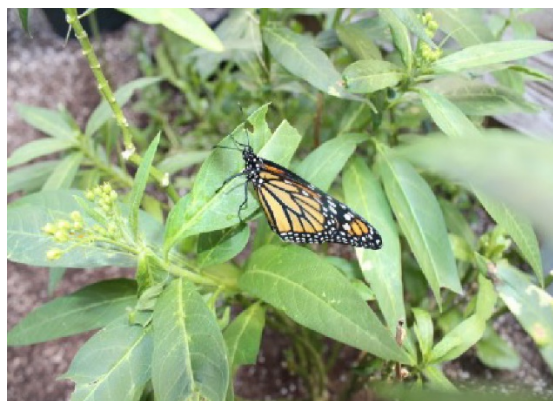
5. *Asclepias albicans* (Whitestem)

6. *Asclepias erosa* (Rush)

The last three listed are considered desert milkweed. Narrowleaf milkweed is the most commercially available native to buy.

Other milkweeds for sale may native to other states or geographic areas and labelled as "native". Be aware of this milkweed list if you are interested in buying and planting only San Diego County native milkweed.

Non-Native Milkweed



Monarch on tropical milkweed, '*Asclepias curassavica*'.

Non-native milkweed comes from anywhere outside of San Diego County. A major general difference between native and non-native milkweed is native milkweed goes dormant over the winter and non-native milkweed does not.

The most available non-native milkweeds for sale at San Diego County nurseries are:

- *Asclepias curassavica*

Two *curassavica* varieties are 'Tropical' & 'Silky Gold'

Other non-native milkweed plants you might find for sale or seeds to grow include:

- Showy (*Asclepias speciosa*)

- Butterfly Plant (*Asclepias tuberosa*)
- Balloon Plant (*Gomphocarpus physocarpus*)
- Giant (*Calotropis gigantea*)
- Crown flower (*Calotropis procera*)
- Swamp (*Asclepias incarnata*)
- Pine Needle (*Asclepias linaria*)

San Diego County Native Flowering Nectar Plants for Butterfly & Pollinator Gardens

Achillea millefolium – Yarrow

Asclepias albicans - Whitestem Milkweed

Asclepias californica - California Milkweed

Asclepias eriocarpa - Indian (or Woollypod) Milkweed

Asclepias erosa - Desert Milkweed

Asclepias fascicularis - Narrowleaf Milkweed

Asclepias subulata - Rush Milkweed

Baccharis pilularis - Coyote Brush (or Bush)

Baccharis salicifolia - Mule-fat

Ceanothus - California Lilac

Encelia californica - Coast Sunflower

Eriogonum - Buckwheat

Eriophyllum onfertiflorum - Golden Yarrow

Helianthus acnnuus - Western Sunflower

Layla platyglossa - Common Tidy-tips

Mimulus - Monkey-flower

Monardella villosa - Coyote Mint

Penstemon

Salvia - Sage - Black, Cleveland, Pozo Blue, White, Purple, Allen Chickering

Solidago californica - California Goldenrod

Verbena - (Some Verbena are non-native)

Two Major Milkweed Pests

1. Oleander Aphid

Oleander aphids (*Aphis nerii*) live on milkweed and other plants. They are winged or wingless females that are parthenogenic, meaning they can clone themselves with no males needed. They are able to replicate themselves many times.



Aphids

If you have a large oleander aphid infestation, hosing them off helps.

Look closely at the photo above and you'll see groups of the larger mother surrounded by her tiny brood. Aphids suck on the milkweed stalk sap. Large numbers can affect the plant by depriving it of its sap.

By sucking on the stalk oleander, aphids expel the sap in the form of a sticky sweet "honeydew" waste product which can cover the milkweed plant. There are ants that "farm" the oleander aphid for this "honeydew."

There have been observations of the honeydew attracting the tachinid fly, a major monarch predator (see above for tachinid fly information). The usual tachinid fly diet includes nectar and pollen so this “honeydew” may be a sweet treat like it is for ants!

It’s important that you have a regular routine for getting rid of the aphids and their “honeydew” as part of your integrated pest management strategy. If you have a small infestation, squash individual aphids with your fingers, or roll them onto a wet cotton swab and dunk the cotton swab into a bowl of soapy water. Some monarch gardeners use pieces of scotch tape to roll along the aphid areas, then dispose in the trash.

Hosing off your milkweed will keep aphid populations low. Know that an aphid latches onto the stalk with its mouth so some hose force may be needed, but not too much that can damage the plant. And yes, you will miss some and they will crawl back on but it will also clean the sticky aphid “honeydew” off. Make sure there are no monarch eggs or caterpillars, including the barely visible first instar, before using the hose.

If you need to move a caterpillar for any reason onto the same or another milkweed, a cotton swab can be used. Very gently and slowly roll a larger instar caterpillar onto it. Experiment to see if it works better to use the cotton swab tip or middle. Start with the caterpillar head and gently roll the rest of the body on as you turn the cotton swab.

Then prop the cotton swab across leaves on its destination milkweed so the caterpillar can crawl off. Never use a cotton swab with a tiny instar as the caterpillar can easily get stuck in the end tip threads and will not be able to move and will be impossible to remove safely and alive.

You won’t get rid of aphids totally and permanently, but you can help control them. Don’t make trying to get rid of every aphid a “mission” because you won’t succeed. Sometimes a

monarch gardener gets obsessed about it and it destroys their joy of monarch gardening.

Milkweed Leaf-miner Fly



Early leaf-miner fly damage.

The milkweed leaf-miner fly (*Liriomyza asclepiadis*) is a small insect whose female lays eggs on the undersides of milkweed leaves. Upon hatching, the larvae penetrate the leaf tissue, feeding between the leaf layers. The initial signs of their presence are characteristic circular trails created as they consume leaf material, leading to a progression of discoloration from green to yellow, then brown, ultimately resulting in leaf drop. This discoloration can sometimes resemble rust, typically associated with excess moisture; thus, it is important to consider leaf-miner damage in the absence of wet conditions.

A straightforward technique for managing leaf miners involves mechanical removal through crushing the affected leaves. This can be accomplished by placing the thumb on the top surface of the leaf and the index finger underneath, applying firm pressure to compress the leaf. It is essential to ensure that all areas of the leaf are pressed to effectively eliminate any larvae, even if visible damage is not apparent. The technique should be executed swiftly, with a single application per area to minimize harm to the leaf itself.

For initial infestations, regular application of this method may be necessary; once populations are

controlled, the frequency can be reduced to prevent re-infestation. If a leaf exhibits significant damage, such as extensive yellowing or signs of decay, it should be removed and disposed of in a sealed bag. Prior to this, it is advisable to inspect each leaf for the presence of eggs or caterpillars to manage the population effectively.



Mesh Paint Strainer Bags

Mesh paint strainer bags are a versatile tool to use in a monarch butterfly garden. They come in different sizes and quantities. One and/or five gallon sizes can work well and be purchased at a home improvement store (paint department) or online. The ones in the photos have an elastic opening that you can work with to keep insects out. But pay attention to any caterpillars needing to crawl off to make their chrysalis or adults about to eclose from their chrysalis. Remove bags whenever there is a reason.

Other reasons to use a mesh paint strainer bag include helping protect a milkweed plant from leaf miners, keeping a female monarch from laying eggs on a milkweed seedling too small to support any caterpillars as they would destroy it, and protecting a milkweed that is growing back after being decimated by caterpillars from having a female lay eggs on it too soon.

The UCCE Master Gardeners of San Diego County wish you success and fun creating your monarch butterfly garden habitat. You are helping the monarch butterfly survive and thrive! The monarchs thank you!

References

UCCE Master Gardener Program of San Diego County © 2024 Judith Wolinsky

All Photos: Judith Wolinsky, UCCE Master Gardener of San Diego County, Monarch & Friends – “Helping the Monarch Butterfly Survive & Thrive.”

For permission to reprint or use photos contact: monarchandfriends@gmail.com

The UCCE Master Gardener Program of San Diego County is a non-profit organization and 85 percent of all proceeds support educational outreach services including community, school and demonstration gardens and specific programs to help change the way San Diego gardens.

*The UCCE Master Gardener Program extends to the public research-based information about home horticulture and pest management. Master Gardeners are selected and trained by the University of California Cooperative Extension (UCCE) to volunteer in the community, educating home gardeners on tested gardening methods. The UCCE San Diego County Master Gardener Program was formed in 1983 and has over 350 active volunteers who donate thousands of volunteer hours to the community each year. **A free gardening hotline staffed by Master Gardeners is available at (858) 822-6910.***

Master Gardener Association of San Diego County supports the UCCE Master Gardeners of San Diego County. The University of California Division of Agriculture & Natural Resources (ANR) prohibits discrimination or harassment of any person in any of its programs or activities (Complete nondiscrimination policy statement can be found at <http://ucanr.org/sites/anrstaff/files/107778.doc>)

Inquiries regarding ANR's equal employment opportunity policies may be directed to Linda Marie Manton, Affirmative Action Contact, University of California, Davis, Agriculture and Natural Resources, One Shields Avenue, Davis, CA 95616, (530) 752-0495.

**UCCE MASTER GARDENER PROGRAM
of SAN DIEGO COUNTY**

*University of California Cooperative Extension
9335 Hazard Way, Suite 201
San Diego, CA 92123
(858) 822-7711 office
(858) 822-6910 hotline
www.MasterGardenerSD.org*

