Marvelous Monarchs

UCCE Stanislaus County

Master Gardener Program

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About the UCCE Stanislaus County Master Gardeners

We extend research-based knowledge and information on home horticulture, pest management, and sustainable landscape practices.

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Agenda

- Butterfly basics
  - Butterfly anatomy
  - Butterfly Metamorphosis/Life Cycle
  - Some local butterflies
  - How to attract butterflies to your garden
- Monarchs
  - Life stage
  - Migration
  - Why endangered
  - How we can help

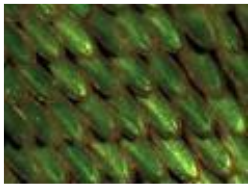
UC Davis Arboretum and Public Garden.

Master Gardeners are not entomologists. There will be places during this talk when you can ask questions. We will do our best to answer them. If I can't, someone will get back to you.

All photos by Ellen Zagory unless otherwise noted

Butterfly Anatomy

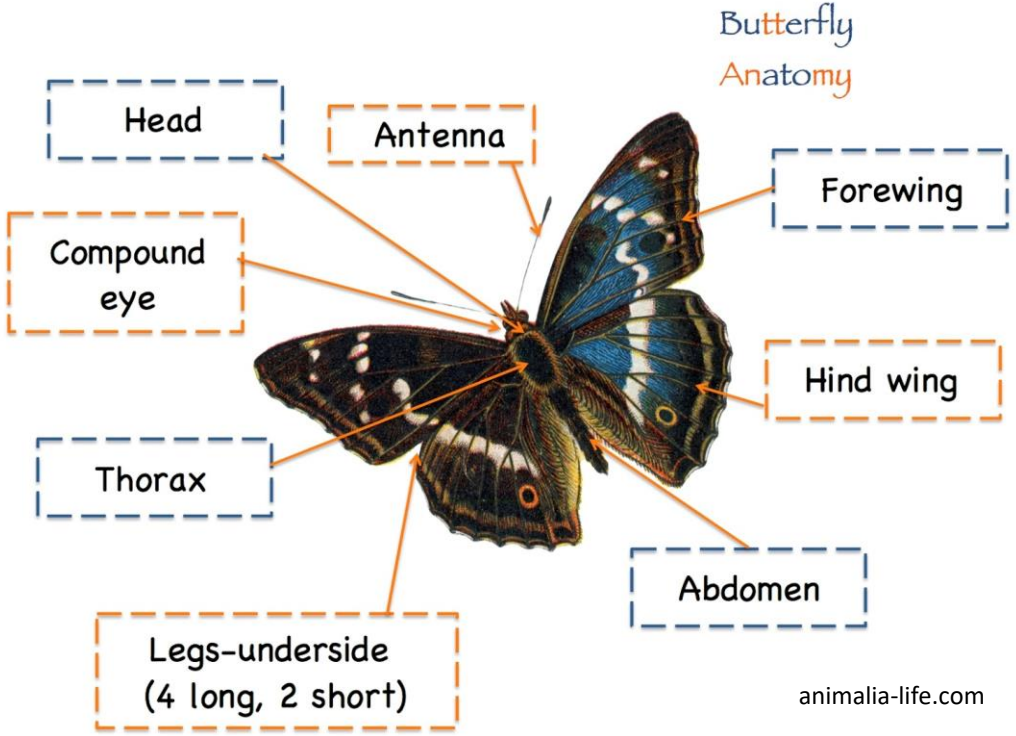
Order *Lepidoptera:* *(along with moths)*
lepido =scaly/ ptera=wing



Scales (magnified)

Butterflies are **insects.**
Like all insects they have:

- Three basic body parts
  - Head
  - Thorax
  - Abdomen
- Six legs (3 pairs)
- Two pair of wings (most insects have 2 pairs, but they're not always visible):
  - Forewing
  - Hind wing



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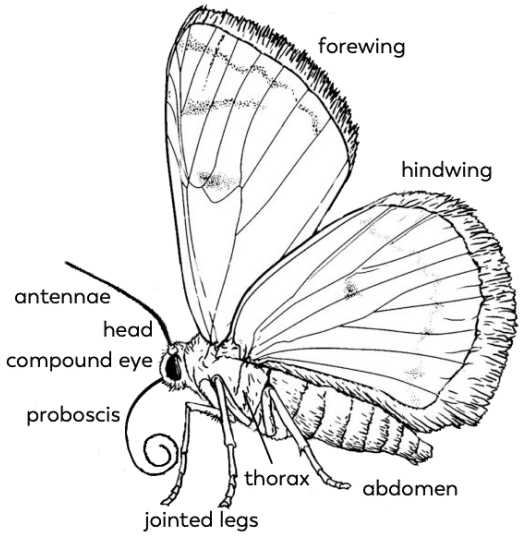
Proboscis

- The butterfly's long "tongue" is a combination sponge and "sippy straw"
- When the pupae is still in its chrysalis the future proboscis is "unzipped"
- When the adult butterfly emerges from the chrysalis, the two halves merge in the tube-like proboscis



Graphic by Takuya Yoshida

Credit: Monarch Butterfly USA

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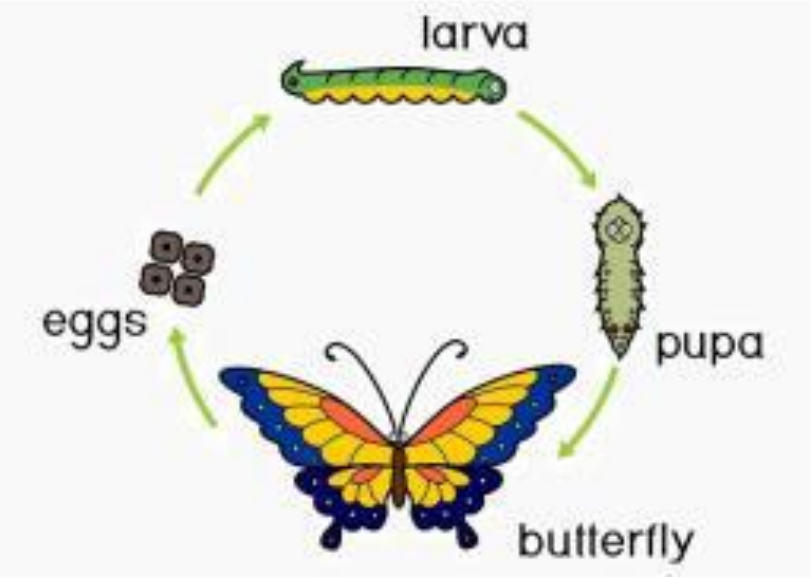
- Butterflies undergo **complete metamorphosis** which has four distinct life stages: the **egg**, which hatches to a **caterpillar (larva)**, then changes into a **pupa** by liquifying their body while inside their pupal case, emerging to the **adult** butterfly
- Adults are mostly nectar feeders, are the only stage of butterflies to feed on flowers (pollinators)
- Larva, or caterpillars, eat plants (green leaves)



https://biologydictionary.net/complete-metamorphosis/

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Four Life Stages Requirements

Environmental requirements and hazards are different for each stage
Being eaten or parasitized is a hazard in all stages

Zephyr angelwing larva on *Ribes*

- **Egg**: needs host plant for oviposition
- **Larval (Caterpillar)**: needs the correct host plant and enough leaves/food to grow to maturity
- **Pupal**: Needs a protected place to pupate and develop
- **Adult**: Needs nectar for flight (and salts and minerals for nutrition)

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Larva/Caterpillar

Monarch larva on narrow leaf milkweed

All caterpillars need specific host/larval food source plant(s) to survive:

- Gulf fritillaries eat passion vine
- Mourning cloaks need willow (*Salix*), cottonwood and ornamental elm
- Painted ladies like mallow
- Monarchs eat milkweed (more on this later!)

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Butterflies overwinter, surviving in various ways, depending on the species as eggs, larvae, pupa or adults

Butterflies are ectotherms (cold-blooded) so cannot fly when it gets below 55° F or when it is raining

Gulf fritillary *egg*

Anise swallowtail *larvae*

Monarch *adult*

Painted lady *pupa*

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Migration

Another strategy for surviving winter

The two common migrating butterflies we see are:

<u>Monarchs</u>

Pacific population migrates south and west in the fall to winter over along coast, with the eastern population wintering in Mexico (more on this later!)

<u>Painted ladies</u>

Migrate to our area from the desert in late winter, early spring

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Seasonality

- Lifecycle is strongly seasonal
- Butterfly numbers start off scarce in spring
- Build up their numbers with successive generations

Butterfly populations peak in September and October

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QUESTIONS?

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Which butterflies will you see in your garden? It depends on. . .

Connectivity of your habitat to surrounding landscapes:

- Proximity to natural areas
- Surrounding gardens and the plants in them

Polyphagy and mobility

- How wide a diet the butterfly species has (generalist or specialist)
- Distance between habitat patches; some species rarely move more than a few feet

Gulf fritillary on lantana

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“The best you can do is provide them a good pub”

Mariam Rothschild, Butterfly Gardening

Butterfly **abundance** is determined by **food availability**

- **Host plants** for caterpillars
- **Nectar** for adults who use it as source of energy for flight, to mate, and lay eggs

Gray hairstreak on milkweed

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Manage your landscape for butterflies

- Provide a **diversity of plants** (preferably native) of different layers
- Provide host plants for **egg laying sites**
- Maintain sheltered, **undisturbed places for hibernation and overwintering**
- **Avoid pesticides**: Be aware that the organic pesticide known as *Bt* kills caterpillars, the larvae of butterflies
- Butterflies prefer **sunny open areas** to warm wings for flight

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“Leave the leaves” and some undisturbed sites for overwintering

Overwintering sites include:

- Leaf litter
- Dense vegetation
- Tree cavities
- Muddy puddles for

sipping and extracting nutrients

Sulfur butterflies puddling
Astro/nature guy CC BY-NC 2.0

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Egg-Laying: Provide Host Plants for Larva

Monarch on star thistle

- Some butterflies have adapted to our modified non-native landscapes
- Due to the conversion of wetlands and grasslands to irrigated agriculture, host plant numbers are greatly reduced
- About half of Central Valley butterflies feed from “weeds”

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Some considerations for plant selection and design

- Use as many native plants as possible—they support 3x as many butterflies and moths as non-natives
- Plant density—use masses 3 feet in diameter or more
- Include some grasses as overwintering sites and host plants
- Provide for blooming in spring, summer and fall

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What flowers attract adult butterflies?

- Plants with flowers that produce **nectar** they can sip with their proboscis
- Some also feed on sap, rotting fruit, dung, honeydew

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Flower Types

Small tubular/funnel flowers are especially adapted to butterflies' proboscis. Flat flowers provide landing pads.

Broad & Cup Shaped

Tubular & Funnel Shaped

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Make diverse plant choices for diverse butterfly support

- Butterflies need nectar for energy throughout the year
- Use plants that will bloom at various times of the year for longer supply period
- Check that California native plants are water compatible with your nonnative plants; choose water-wise plants whenever possible

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Native vs. Non-native Plants

UC ANR

- Pollinators may be attracted to many flowers you can buy at local nurseries
- Not all flowers provide needed nutrition
- Native pollinators have evolved a relationship with native plants over time that provide sustainable nutrition
  - Ornamentals, especially hybrids and cultivars with double flowers, may provide little to no nutrition for pollinators. These are grown to attract people more than to attract pollinators.

Following are some butterflies in various stages you might see in our area. . .

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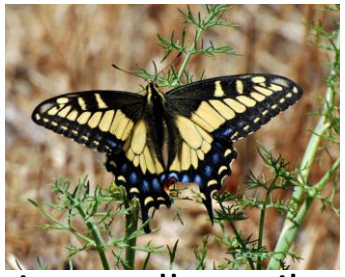
Swallowtail butterflies

Caterpillar/Larva



Anise swallowtail on host plant: fennel

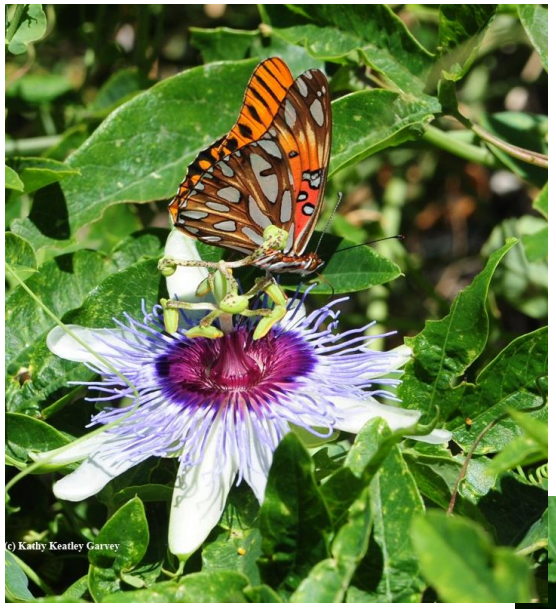
Pupa

Egg

Anise Swallowtail
(*Papilio zelicaon)*

Anise swallowtail butterflies need to lay their eggs on fennel. They are native, but have adapted to eating fennel, parsley, carrots, and anything in the carrot family.

Gulf Fritillary Butterflies



Adult on passionflower

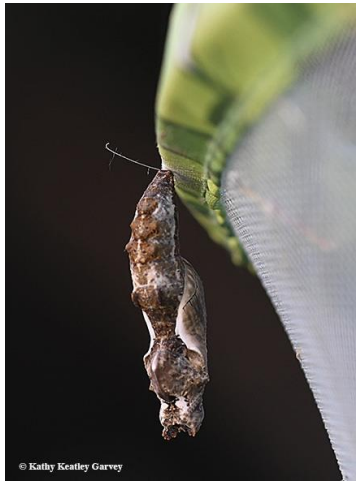
- Gulf fritillaries (*Dione vanilla)* are prolific, mainly urban, not cold hardy
- The caterpillars rely on passionflower (*Passiflora* spp.)

Egg

Adult on lantana

Caterpillar/Larva

Pupa



Painted Lady Butterflies

Adult Painted Lady

Vanessa cardui

- Many various host plants, borage family, aster family, legume family and more
- Migrant from south to north

Egg

Painted lady on host plant: thistle

Pupa

Caterpillar/Larva

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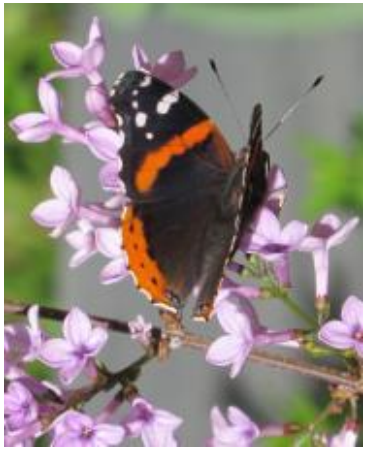
More *Vanessa* butterflies

Vanessa annabella
West coast lady
• Host plants: Malvaceae (Malva, Malvella, Hollyhock, Lavatera)
• Our most common painted lady



Vanessa atlanta
Red admiral
• Host plants: Urticaceae (nettles)

Vanessa virginensis
American lady
• Host plants: *Anaphalis* (Everlastings), *Gnaphalium* (Cudweeds)
• Least common

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Monarch Butterflies

Danaus plexippus

- Most recognized butterfly in the world
- Known for their epic migrations
- Compared to other butterflies, they are:
  - Larger
  - Soar instead of flutter
  - Have bright, easily visible wings
- Populations in North America, Central America, South America, New Zealand and Australia. They are most prevalent in eastern United States but are also found in western USA.
- Their range in North America is determined by milkweed distribution, with the furthest north being just north of Winnipeg, Manitoba, Canada

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Monarch butterfly stages in your garden

Leave all stages alone!

Takes about 24 - 34 days from egg to adult

Egg Stage

- Laid singly, usually one/milkweed plant, which helps ensure enough food source for larva
- Usually lay on bottom of leaf, near top of plant
- Total number of eggs laid varies by butterfly, but usually 400-500
- Egg is size of grain of salt
- Takes 3 – 5 days for caterpillar to hatch

Photo credit: SherrylL18; Getty Images

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Monarch butterfly stages in your garden

Larva/Caterpillar Stage

- Chews its way out of the egg, eating the egg as its first food source
- Spends the next 10 – 14 days eating milkweed leaves
- As it gets larger, it molts its exoskeleton. There are 5 molts or ***instar*** stages. Stops feeding before and after each molt.
- It grows from 1/16th of an inch to about 2 inches

Monarch butterfly stages in your garden

Pupae Stage

- After its 5th instar, the caterpillar starts wandering, looking for a suitable, sheltered location to pupate.
- It will attach itself upside-down to a surface with a “button” of silk, hanging into a “J.”
- It will create its chrysalis, which is the exoskeleton, or skin, of the pupa. This will be its home for the next 11-15 days.
- As the time for emerging draws near, the chrysalis will begin to darken and image of its wings appear.

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Monarch butterfly stages in your garden

Adult Stage

- In the final hours before emergence, the chrysalis will become translucent, a crack will appear, and the monarch will free itself from the case.
- Hanging from the chrysalis case, it will spend the next few hours pumping fluid into its wings until they're firm and dry enough to fly.
- The 2 separate halves of its proboscis will join.
- Eventually it will take flight and within a day will start seeking out nectar for its 1st meal.

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Mating

- Males are slightly larger than females.
- If the monarch is a male, it will search for a female.
- Males can be aggressive, pursuing the female until he takes her down.
- If the pairing is successful, they may remain attached for as long as 14 hours.
- Both males and females are polygamous, mating with several partners.

Male monarch: Note the black spot on each hind wing; these are scent glands, which produce a chemical used during courtship

Female monarch: Note the absence of black spot on each hind wing

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Toxic Milkweed

In addition to being the sole source of food for Monarch butterfly caterpillars, the toxins present in milkweed offers some protection to Monarchs during both the caterpillar and adult stages since it is poisonous or distasteful to many of their predators

These predators learn to recognize the Monarch caterpillar's distinctive striping and the adult's orange and black coloring and will thus avoid them. . .

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Monarch Copycats

Some species of edible or harmless butterflies take advantage of predators' avoidance of Monarch caterpillars and adults by imitating their markings. This is known as **mimicry** in biology.

Some examples:

Gulf fritillary - adult

Painted lady - adult

Red admiral - adult

Monarch - adult

Anise swallowtail - caterpillar

Monarchs fly slowly, which helps distinguish them from Gulf fritillaries

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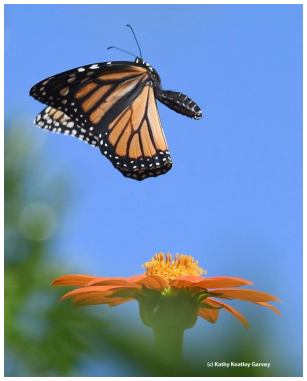

Monarch Migration

The monarch migration is extraordinary with none quite like it in the butterfly world

- A butterfly in southern Canada/northern USA begins an epic one-way journey south in the fall, traveling up to 2,800 miles to a specific place where they've never been to before, where their great-great grandparents were the previous year.
- They travel an average of 44 miles/day, up to 200 miles/day.
- No single monarch makes the entire roundtrip journey. There are 4-5 generations each year (depending on weather) with 3-4 generations going north in the spring and summer, and a generation going south in the fall to where it winters over.
- Many will not survive due to weather conditions or predators
- How each successive generation knows the route and where to spend winter remains largely a mystery.

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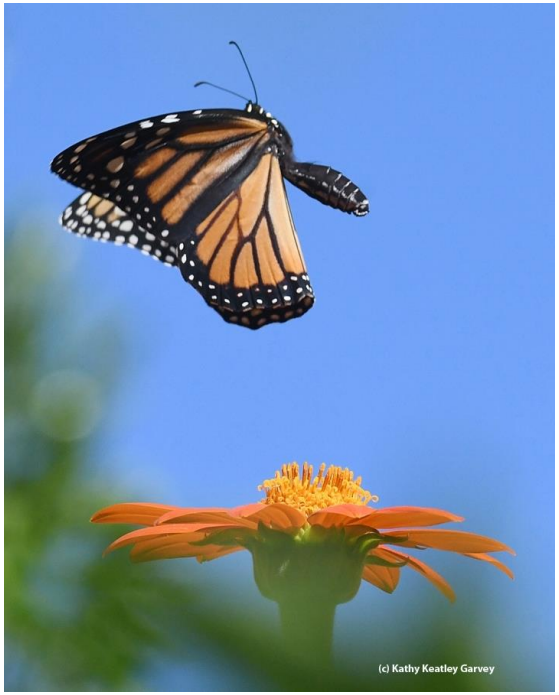
Monarch Migration



- There are two populations of Monarchs in the USA, which are separated by the Rocky Mountains. Studies show them to be essentially genetically identical:
- **Eastern Monarchs** which generally overwinter in Mexico
- **Western Monarchs** are a smaller group which overwinters along California's coastal areas from Monterey to San Diego

Spring – Summer Migrations

- The **spring-summer 1st migration** begins when monarchs who have overwintered at sites in Mexico or coastal California, begin to fly north.
- Starting in February, it can continue to the first week of April. Generally, the butterflies furthest south will begin migrating first.
- The adults usually mate prior to leaving their overwintering site.
- Females will lay eggs on milkweed, with both sexes feeding on nectar while moving northward.
- By the first of May, this first generation, who were born the previous fall, have passed due to the end of their life cycle.

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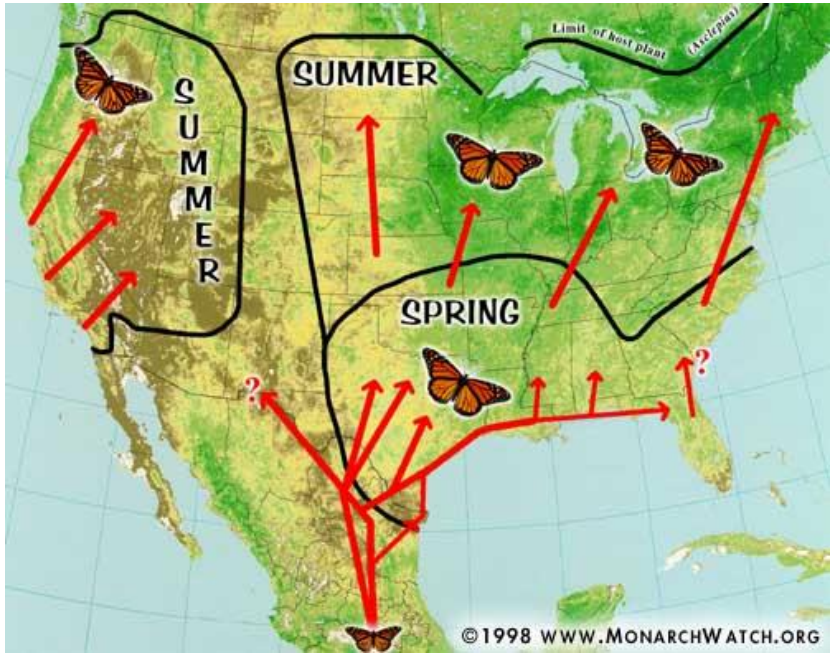
Monarch Migrations: Spring/Summer



- Offspring from the first migration generation generally reach the adult stage by mid-late April, and once mature, start the **second migration**.
- With each generation, mating occurs, eggs are laid on milkweed, caterpillars hatch, pupate in chrysalis, become mature adult butterflies, continuing northward, producing offspring for a **third** and perhaps a **fourth migration.**
- As adults, these spring/summer generations generally will live 2 – 6 weeks.

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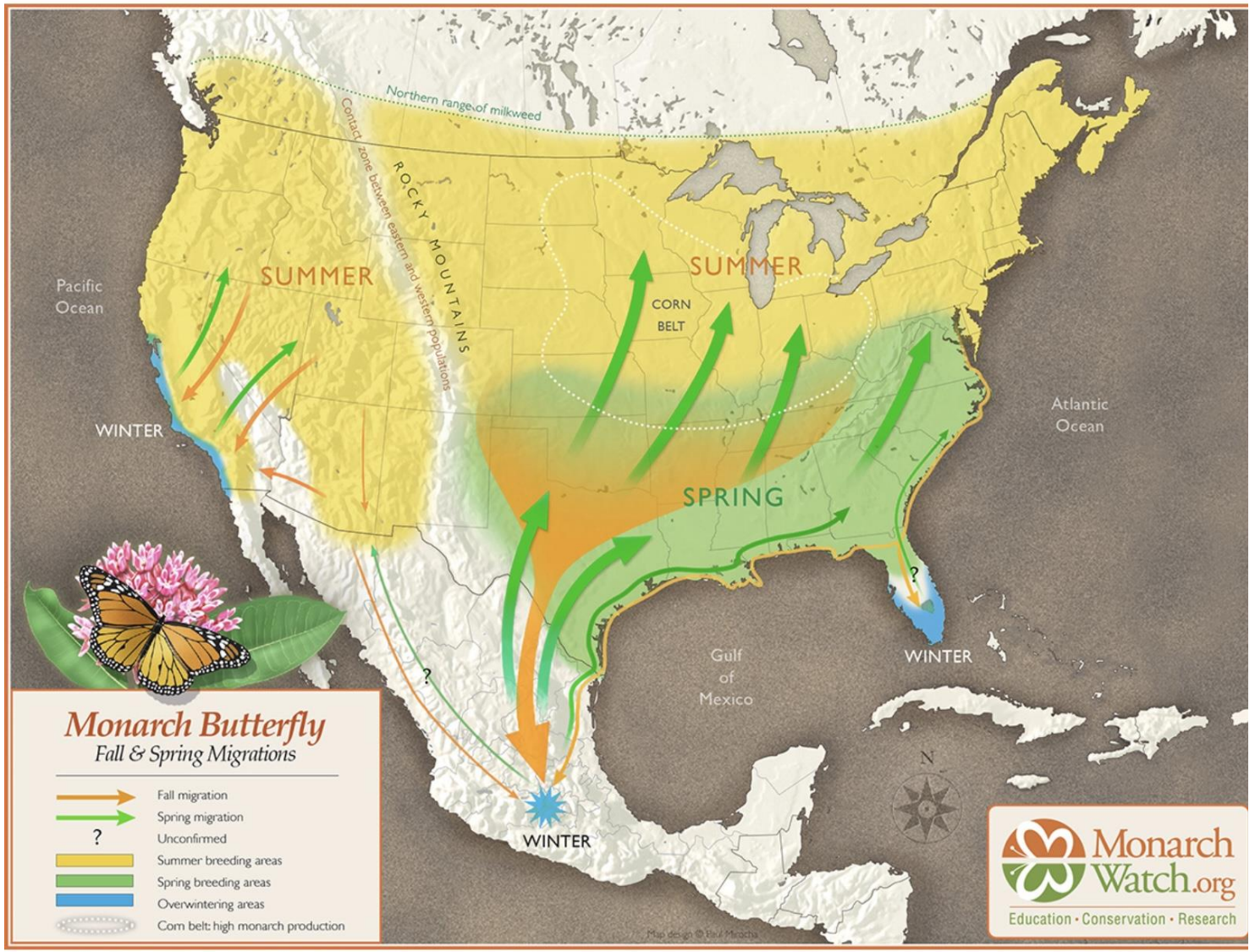

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Fall – Winter Migration

- The **fourth generation** (or possibly fifth), will be in southern Canada/northern USA during late summer/early autumn.
- The fall-winter migration begins around mid-August through early September.
- A number of factors signal it is time to head south to overwintering sites, including:
  - Days are steadily getting shorter with the sun reaching 57 ^{o} off the horizon.
  - Daytime temperatures remain relatively warm, but nights are becoming cooler. As a result, the quality of milkweed declines.

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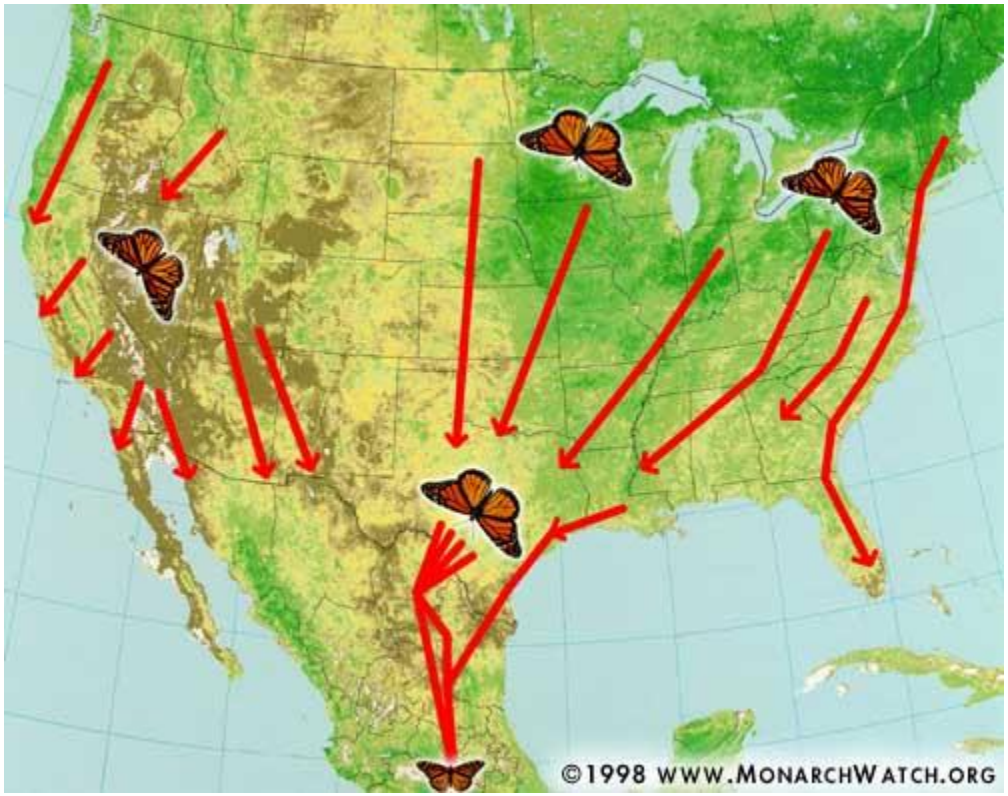
Fall - Winter Monarch Migration



- Those further north will begin migrating south first.
- As they make their way south, they are seen in both large and small groups, resting for the night or during inclement weather in trees and shrubs.
- Ultimately, those who survive the long journey will arrive at their over-wintering sites.

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Fall – Winter Migration, cont.

- This generation, which hatched and became adults in late summer/early fall is known as the **Methuselah Generation** because it will live 6 – 8 months (after the biblical Methuselah who was said to have lived 969 years).
- They do not emerge from their chrysalis as sexually mature butterflies. Instead, they are in what is known as *sexual diapause*. They also tend to be larger than the earlier generations of the year. By not becoming sexually mature until the following spring, this final summer-fall generation's energies are put towards developing flight muscles and storing lipids for their long journey south and surviving the winter months.
- After over-wintering, come spring, with warming temperatures and longer days, these butterflies will become sexually mature at their winter site, mate, and start the cycle once again with the first northward migration of that year.

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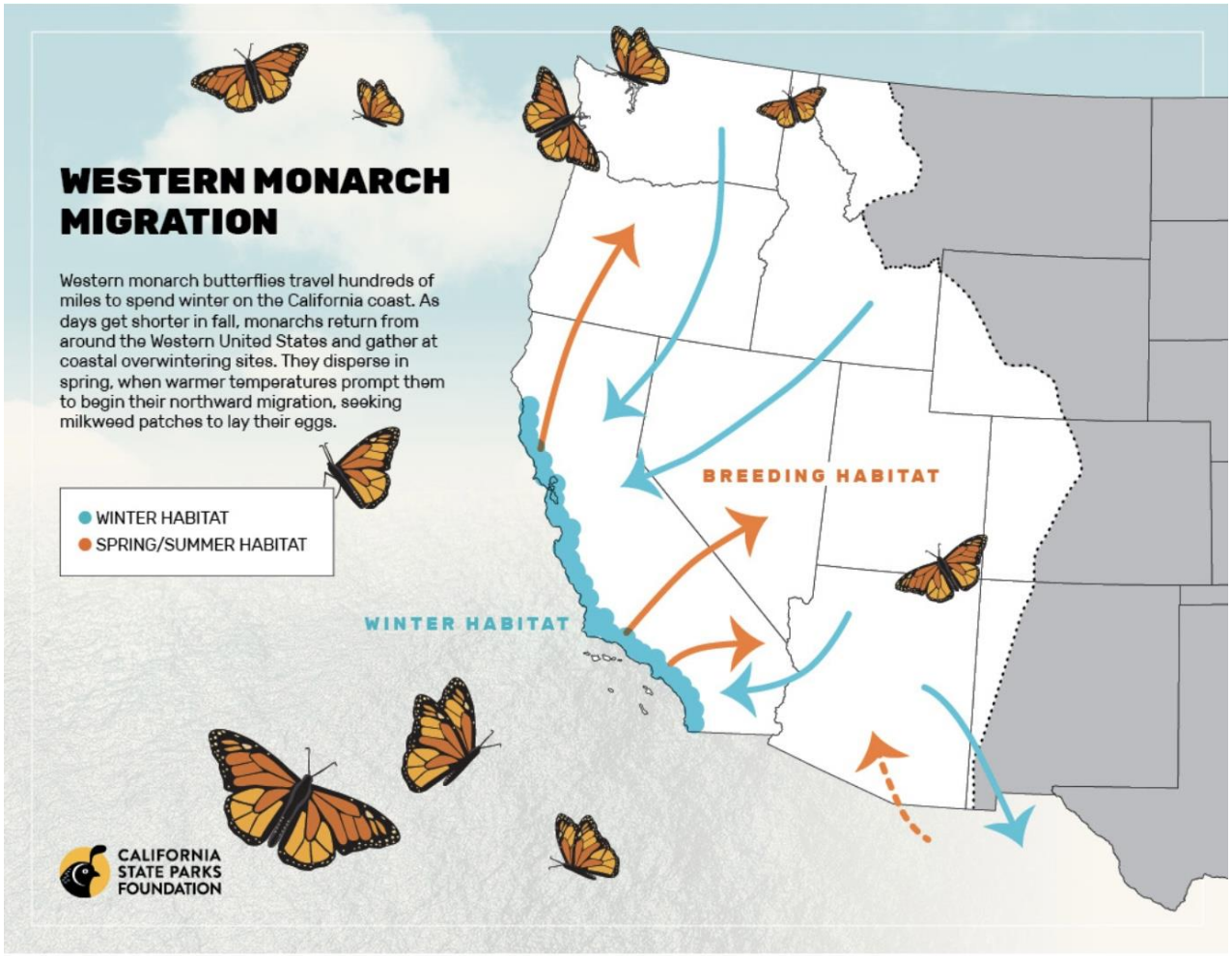

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Monarch Winter Sites

Wintering at Pismo Beach, CA, Nov 2022

Rhonda Allen

Wintering in oyamel forest, Michoacan, Mexico

Journeynorth.com

- There are about 300 California coastal wintering sites, which include **Pacific Grove** and **Pismo Beach** in pine, cypress and eucalyptus trees. Some are on public lands and others on private property.
- In Mexico monarchs roost for the winter in **oyamel fir forests** at an elevation of 2,400 to 3,600 meters (nearly 2 miles above sea level). The mountain hillsides of oyamel forest provide an ideal microclimate for the butterflies.

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Monarchs Closer to Extinction

Now on the world's list of Critically Endangered animals

On July 21, 2022 the *International Union for Conservation of Nature* (IUCN) announced the migratory monarch butterfly (*Danaus plexippus*) is now on its "Red List of Threatened Species as Endangered--threatened by habitat destruction and climate change."

The announcement goes on to say: "The western population is at greatest risk of extinction, having declined by an estimated 99.9%, from as many as 10 million to 1,914 butterflies between the 1980s and 2021," according to the IUCN news release. "The larger eastern population also shrunk by 84% from 1996 to 2014. Concern remains as to whether enough butterflies survive to maintain the populations and prevent extinction."

The good news about this is safeguards and financing can now be provided to help protect them.

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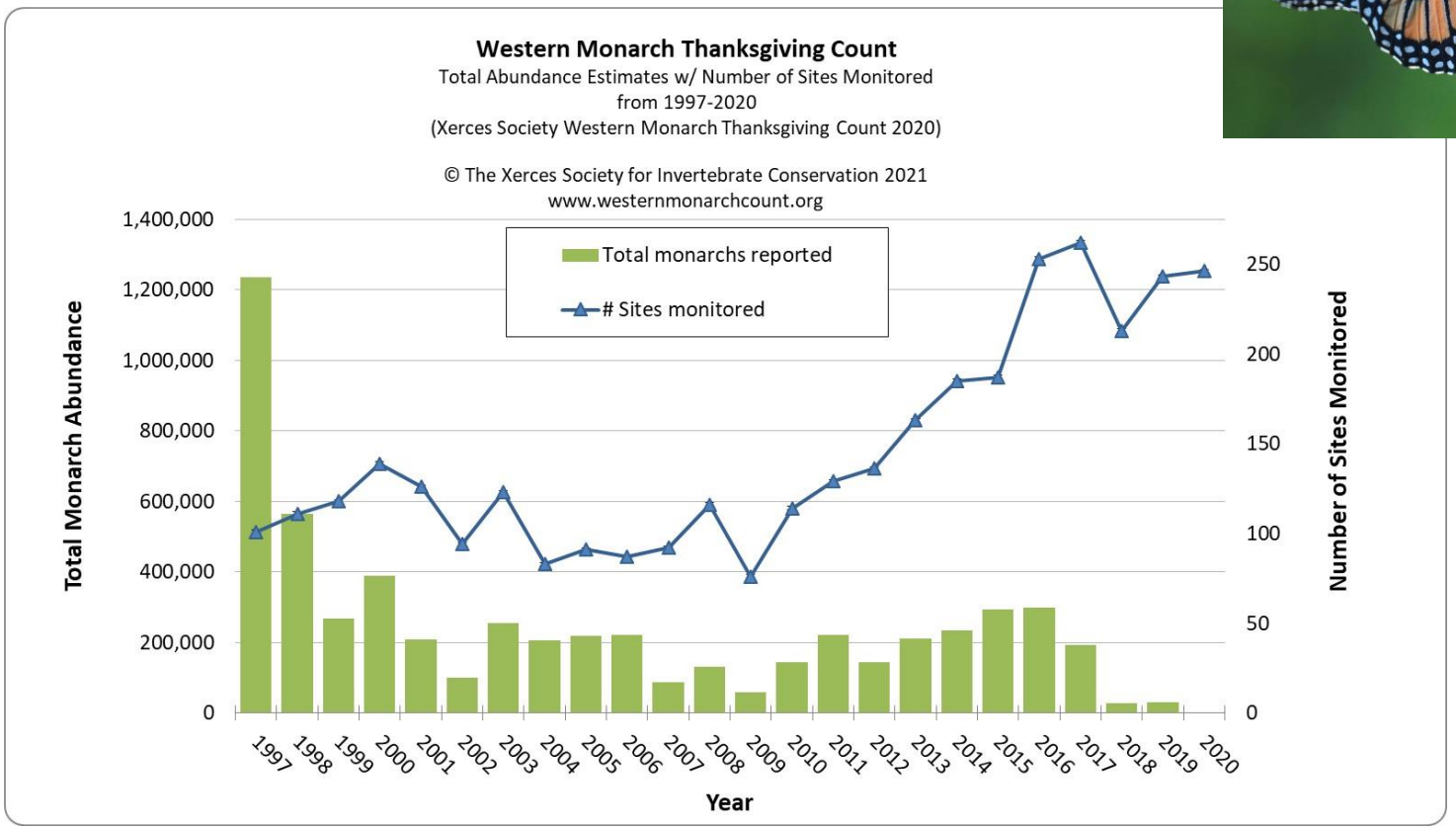
Monarchs in Decline: Tagged



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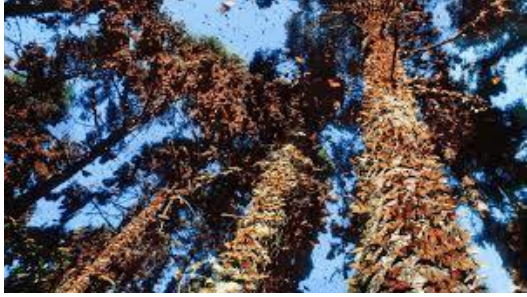
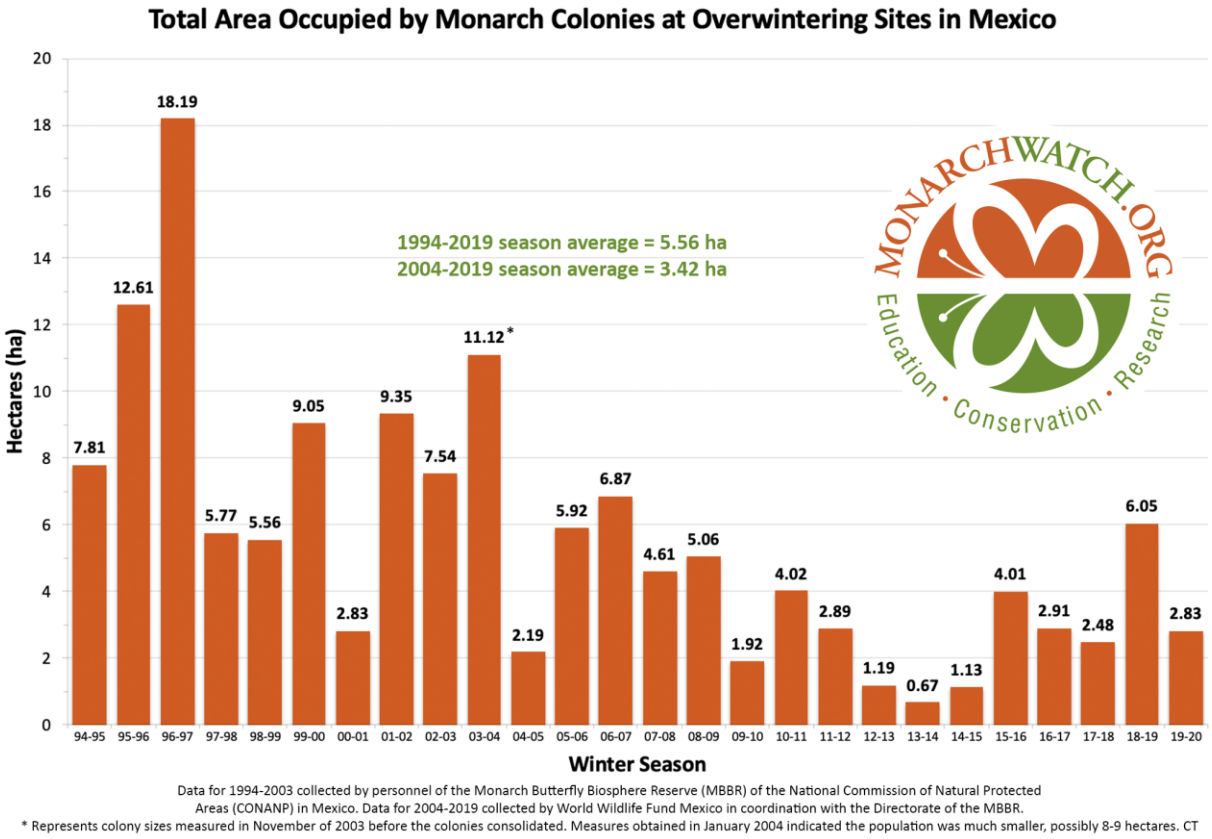
Monarchs in Decline: Overwintering





Data for 1994-2003 collected by personnel of the Monarch Butterfly Biosphere Reserve (MBBR) of the National Commission of Natural Protected Areas (CONANP) in Mexico. Data for 2004-2019 collected by World Wildlife Fund Mexico in coordination with the Directorate of the MBBR.

* Represents colony sizes measured in November of 2003 before the colonies consolidated. Measures obtained in January 2004 indicated the population was much smaller, possibly 8-9 hectares. CT

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How you can help

Plant nectar plants for the adults!

- Native plants with tubular or funnel shapes are particularly attractive and nutritious for butterflies
- Remember to have a variety of plants from spring through fall so something is always blooming

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Some Native Plants

Purple sage

Coyotebrush

California buckwheat

Goldenrod

Black sage

Silver bush lupine

Western redbud

Rabbitbrush

Ceanothus

California fuchsia

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Readily Available Plants

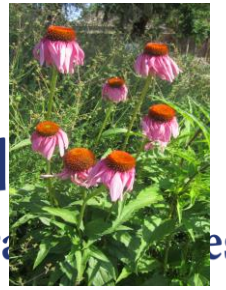
- Salvias, such as Hot Lips variety
- Honeysuckle vines
- Mexican sage
- Sunflowers
- Asters
- Yarrows
- Blanket flower
- Coneflower











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Plant a variety of milkweed species!

Monarch caterpillars feed on milkweed plants only

- Milkweed (*Asclepias*) is a genus of herbaceous, perennial, flowering plant, named for their latex, a milky substance, which is exuded when the plant is damaged. It can be toxic to humans and many other species.
- Several local native varieties include:
  - *Asclepias fascicularis* (Narrowleaf milkweed)
  - *Asclepias speciosa* (Showy milkweed)
  - *Asclepias syriaca* (Common milkweed)
  - *Asclepias cordifolia* (Heartleaf milkweed)
- When possible, plant from seed, or buy from reputable source since some plants labeled "wildlife friendly" may be contaminated with pesticides
- Plant/seed in fall when it's cooler and is start of rainy season

Narrowleaf Milkweed

Showy Milkweed

Tropical Milkweed. . .

- Tropical milkweed (*Ascelpias currassavica*), a non-native plant, has been designated as a noxious weed by CA's Dept. of Food and Agriculture
- Sales of tropical milkweed are no longer allowed in Contra Costa, Marin, San Mateo and Ventura counties

Monarch butterfly on showy milkweed

Monarch caterpillar on tropical milkweed

Tropical milkweed can grow later in the year in northern areas

- This could confuse Monarch adults into staying at a time when they should be migrating
- If you do have tropical milkweed, some recommend they be cut back to the ground twice during growing season, so not to interfere with migration and egg laying

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More on Tropical Milkweed. . .

Tropical milkweed is a host plant to a protozoan parasite of monarch butterflies called *Ophryocystis elektroscirrha* (OE). There is some evidence that these spores can negatively affect monarchs.

- As caterpillars eat the plant, they ingest the spores, becoming infected
  - The spores are carried on adult monarchs, spreading the parasite
  - Evidence shows OE infections may be reducing migration success by causing reduced body mass, lifespan, mating success and flight ability.
  - Native milkweeds die back after blooming, causing the parasites to die with it. This ensures next summer's monarch population feeds on fresh, parasite free foliage.

Bees and monarch adult on tropical milkweed

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How you can help

Reduce pesticide use in your garden

Pesticides are harmful to butterflies

- Use IPM (Integrated Pest Management) for information
- Avoid broad spectrum pesticides; choose pesticides targeted for the pest/disease
- When purchasing plants ensure grower does not use neonicotinoid chemicals which are systemic
- If you use a pesticide, choose one that is less toxic such as:
  - Horticultural oils or insecticidal soaps
    - Follow instructions
    - Spray in early morning or evening hours when pollinators aren't present

www.ipm.ucanr.edu

How You can help:
Western Monarch Annual Count

The Western Monarch Count is an annual effort of volunteer community scientists to collect data on the status of the western monarch population along the Pacific coast from Mendocino to Northern Baja, Mexico, during the overwintering season, which occurs from approximately October through March. In recent years, the count has expanded to include annual counts at inland overwintering sites in Inyo County, California, and in Arizona. The Xerces Society now oversees this count:

- The height of this volunteer effort occurs during the **Western Monarch Thanksgiving Count**, which runs for three weeks surrounding the Thanksgiving holiday, and during an additional count added in 2017, the **New Year's Count** which occurs around New Year's.
- Information to become involved is found: https://www.westernmonarchcount.org/

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Tagging Monarchs

The Monarch Watch Tagging Program is a large-scale community science project that was initiated in 1992 to help understand the dynamics of the monarch's spectacular fall migration through mark and recapture:

- Each fall they distribute more than a quarter of a million tags to thousands of volunteers across North America who tag monarchs as they migrate through their area. These "community scientists" capture monarchs throughout the migration season, record the tag code, tag date, gender of the butterfly, and geographic location then tag and release them. At the end of the tagging season, these data are submitted to Monarch Watch and added to their database to be used in research.
- The tools needed to get involved are on this website: https://www.monarchwatch.org/tagging/

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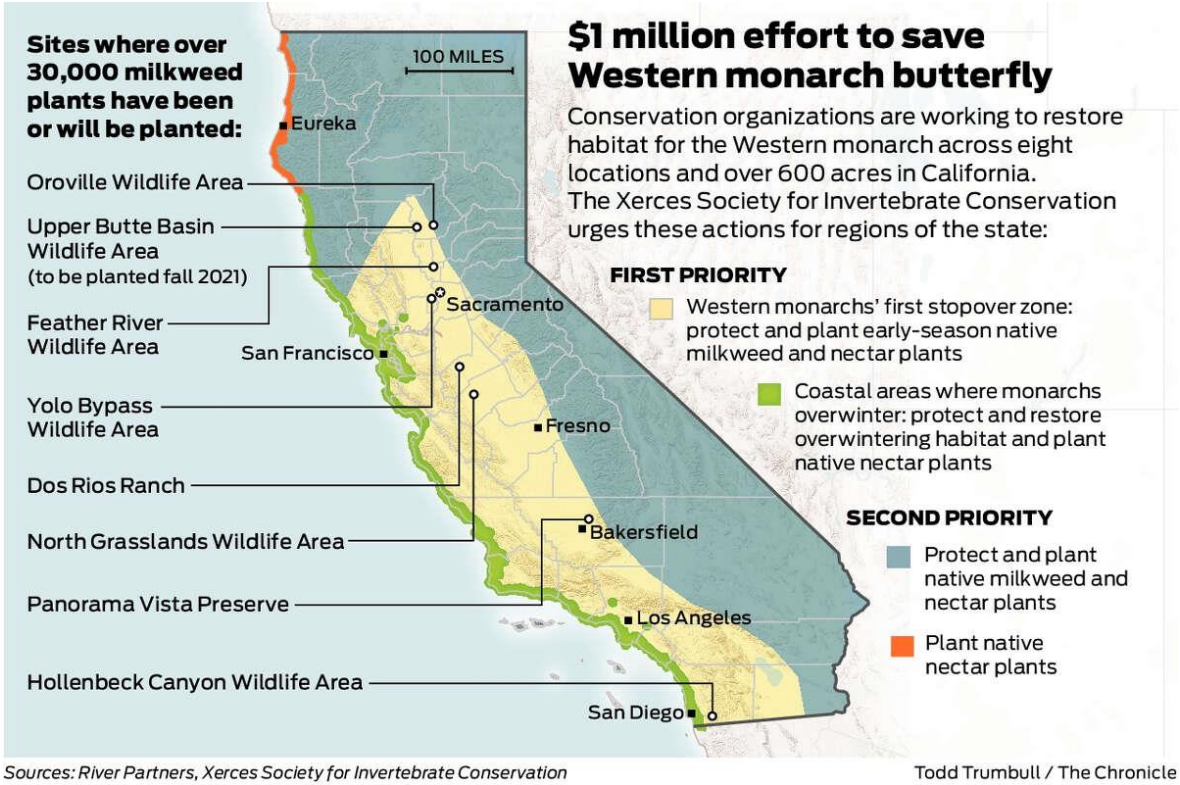
How you can help



Sources: River Partners, Xerces Society for Invertebrate Conservation

Todd Trumbull / The Chronicle

In addition to planting milkweed in your garden, help create a milkweed corridor.

Planting milkweed in schools, parks, along rivers, and roadsides will help create a connection between habitats. Plant seeds in the fall!

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See a Native Plant Garden for Ideas

- La Loma Native Garden: 1805 Encina Avenue, Modesto
- UC Davis Arboretum

Photos by Rhonda Allen

Resources

- **Art Shapiro's Butterfly Site**
  https://butterfly.ucdavis.edu/butterflies
- **Butterflies in Your Garden**
  https://ucanr.edu/sites/CEStanislausCo/files/345791.pdf
- **Xerces Society - Pollinator Plants: California**
  https://xerces.org/publications/plant-lists/pollinator-plants-California
- **UC Davis Arboretum – Larval Hosts for Butterflies**
  https://arboretum.ucdavis.edu/blog/larval-host-plants-butterflies
- **California Native Plant Society – Native Planting Guides**
  https://www.cnps.org/gardening/choosing-your-plants/native-planting-guides
- **Calscape – CA native plants** https://www.calscape.org/
- **UC ANR Bug Squad Blog** (you can sign up to receive this blog):
  https://ucanr.edu/blogs/bugsquad/
- **Monarch Joint Venture –** Non-profit a partnership of federal and state agencies, NGOs, businesses and academic programs working together to protect the monarch migration across the United States https://monarchjointventure.org/
- **Milkweed and Pesticides:** https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=55099
- **Monarch Joint Venture Q & A with tropical milkweed information links**:
  https://monarchjointventure.org/faq/tropical-milkweed
- **Blossom Hill Nursery, Oakdale**: https://www.blossomhillnatives.com

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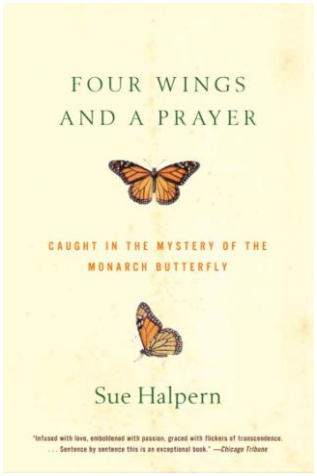
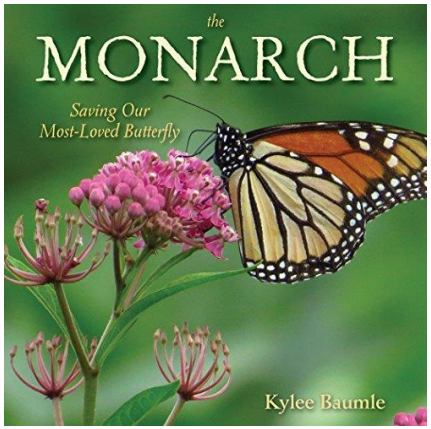
Books

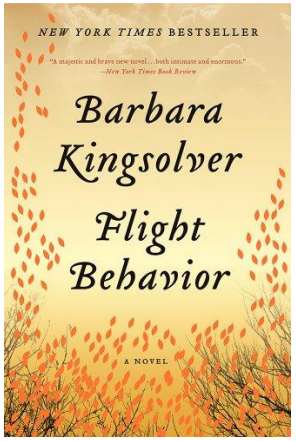


by Sue Halpern: Canadian entomologists Fred & Norma Urquhart spent 38 years researching the monarch migration. A non-fiction, it reads like a suspense novel.

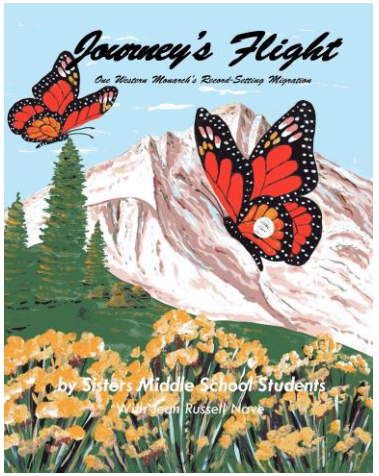


by Kaylee Baumle:

The writer shares years of study and monarch knowledge



by Barbara Kingsolver: Studied biology before becoming a writer, did her research before writing this cautionary novel.



By Sisters Middle School Students with Jean Russell Nave:
Based on a real event of a tagged butterfly's 800 mile journey from Bend, OR to Carpenteria, CA

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Some Monarch Wintering Sites in California

- SONOMA COUNTY
  - Bodega Dunes Campground
- MARIN COUNTY
  - Terrace Ave., Bolinas
  - Fort Baker, Sausalito
- ALAMEDA COUNTY
  - Albany Hill, Albany
  - Ardenwood Historical Farm, Fremont
- SANTA CRUZ COUNTY
  - Lighthouse Field Station, Santa Cruz
- MONTEREY COUNTY
  - Andrew Molena SP
  - Butterfly Grove Sanctuary, Pacific Grove
- SANTA LUIS OBISPO COUNTY
  - Halcyon Hill, Halcyon
  - Oceano Campground, Oceano
  - North Beach Campground, Pismo Beach
- SANTA BARBARA COUNTY
  - Ellwood Main, Goleta
  - Gaviota SB, Gaviota
  - Gaviota Gas Plant, Gaviota
- VENTURA COUNTY
  - Big Sycamore Canyon, Pt. Mugu SP
  - Camino Real Park, Ventura
  - Ocean Ave. Park, Ventura
- LOS ANGELES COUNTY
  - El Dorado Nature Center, Long Beach
  - Recreation Park (south), Long Beach
  - Woodlawn Cemetery, Santa Monica
- ORANGE COUNTY
  - Golden West College, Huntington Beach
  - Huntington Central Park, Huntington Beach
  - San Clemente State Beach, San Clemente
- SAN DIEGO COUNTY
  - Grape Street Park, Balboa Park
  - Presidio Park, Old Town
  - UCSD Coast Site, Azul St.

https://www.themonarchprogram.org/where-to-see-overwintering-monarchs/

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Have a Garden Question?

- Visit our Help Desk
  - Wednesdays from 9:00 a.m. to noon (in person)
- Drop off a sample anytime
  - Business hours are M-F 8:00 a.m. to 4:30 p.m.
- Call (209) 525-6802
- Fill out our form http://ucanr.edu/ask/ucmgstanislaus
- We will get back to you within 5 business days

Stanislaus County Agricultural Center
3800 Cornucopia Way Ste A
Modesto, CA 95358

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on the clipboard going around

- Gardening & pest management articles
- Class announcements

http://ucanr.edu/stansprout

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THE STANISLAUS SPROUT

A blog by the UC Master Gardeners of Stanislaus County

UCANR

UCANR: Promoting healthy people and communities

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Big Dig Day is June 5, 2020

Author: Anne E Schellman

Published on: May 29, 2020

Big Dig Day is almost here! It's a day to show support for your local Master Gardener Program.

The UCCE Stanislaus County Master Gardener Program started in late 2018, and since then we've taught in-person and now online classes on topics like water conservation, growing herbs or vegetables, pollinator gardening, composting with worms, and many others. We hope these classes inspired you to save water, use plants to attract pollinators, and grow healthy food.

As of July, our program has taught 55 people how to become volunteers! Perhaps you've met one of our Master Gardeners at

Master Gardeners at the Modesto Farmers Market.

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Recent Posts Blog Home

- A Garden Journal: My Buggy Summer
- Fall Vegetable Gardening Class Tuesday!
- Sign up for Fall Vegetable Gardening Class Now!
- Fall is a Great Time for Veggies!
- Report Unsolicited Seeds to APHIS

Recent Comments

- Hi Liz, the class is tonight, you...
- Late to class can't find the link...
- Great article Denise. I too have...
- We are glad you are excited!
- Looking forward to learning

Archives All Archives

Help Us Grow!

You'll receive an email survey in 3 months.

Please take it to help grow the quality of our program.

Thank you!

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Monarchs and other butterflies thank you!

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QUESTIONS?

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