



## **All About Monarch Butterflies**

Presented by Rebecca Schoenenberger

### **Master Gardener Program**

Master Gardener program volunteers are trained by the University of California Cooperative Extension. Our mission is to develop, adapt and extend research-based horticultural information and educational programs to the residents of Santa Clara County.

### **Master Gardener Help Desk**

Ask questions online, via telephone, or in-person. Bring plant or pest samples, please call before coming in. Visit our website for current contact info: [mgsantaclara.ucanr.edu](http://mgsantaclara.ucanr.edu)

### **About Monarchs**

- Life Cycle & Metamorphosis
- Migration
- Habitat
- Threats
- Conservation

### **Life Cycle**

- Egg
- Larvae (5 instars)
- Pupae
- Adult

### **Migration**

- Eastern: Southeastern Canada, Eastern USA & Central Mexico
- Western: Southwestern Canada, Western USA

### **Pacific Wintering Habitat**

- California Wintering Sites:
  - ▶ Ardenwood Historic Farm, Fremont, CA
  - ▶ Lighthouse Field State Beach Monarch Grove, Santa Cruz, CA
  - ▶ Natural Bridges State Park, Santa Cruz, CA
  - ▶ Pacific Grove Sanctuary, Pacific Grove, CA
  - ▶ Point Lobos State Park, Carmel, CA
  - ▶ Morro Bay State Park, Morro Bay, CA

- ▶ Pismo Beach Monarch Butterfly Grove, Oceano, CA
- ▶ Ellwood Mesa Open Space, Goleta, CA

## Habitat

- Food
  - ▶ Larvae = Milkweed
  - ▶ Adult = Nectar
- Shelter
  - ▶ Monterey Pine, Monterey Cypress & Eucalyptus
  - ▶ Moderate Weather Extremes
- Space
  - ▶ International

## Western (California) Shelter Trees

- *Pinus radiata* - Monterey Pine
  - ▶ Fast growing, but short lived.
  - ▶ Limited Range
  - ▶ Pitch Canker Disease
  - ▶ Drought Stress
  - ▶ Habitat Destruction / Encroachment
- *Hesperocyparis macrocarpa* - Monterey Cypress
  - ▶ Fast growing
  - ▶ Susceptible to Cypress Disease or Cypress Canker (*Seiridium cardinale*)

## Western (California) Native Milkweeds

- *Asclepias fascicularis* - Narrowleaf Milkweed
- *Asclepias speciosa* - Showy Milkweed

## Other California Milkweeds

- *Asclepias albican* - White Stemmed Milkweed
- *Asclepias asperula* - Spider Milkweed
- *Asclepias asperula ssp. asperula* - Spider Milkweed
- *Asclepias californica* - California Milkweed
- *Asclepias cordifolia* - Purple or Heartleaf Milkweed
- *Asclepias cryptoceras* - Humboldt Mountain Milkweed
- *Asclepias eriocarpa* - Indian Milkweed
- *Asclepias erosa* - Desert Milkweed
- *Asclepias latifolia* - Broadleaf Milkweed
- *Asclepias linaria* - Needle Leaf Milkweed
- *Asclepias myctainifolia* - Mojave Milkweed
- *Asclepias solanoana* - Serpentine Milkweed
- *Asclepias subulata* - Alamete
- *Asclepias vestita* - Woolly Milkweed

- *Funastrum* varieties:
  - ▶ *Funastrum cynonchoides* var. *hartwegii* - Climbing Milkweed
  - ▶ *Funastrum hirtellum* - Hairy Milkweed
  - ▶ *Funastrum utahense* - Utah Vine
- Non-Native Larval Plants:
  - ▶ *Gomphocarpus fruticosus* (*Asclepias fruticosus*) - Balloon Plant or Swan Plant
  - ▶ *Gomphocarpus physocarpus* (*Asclepias physocarpus*) - Balloon Plant, Swan Plant and many more names.
  - ▶ *Oxypetalum caeruleum* (*Tweedia caerulea*) - Blue Flowered Milkweed

## Creating Habitat - Nectar Plants

### Non-Native Nectar Plants:

- *Salvia* - Sage
- *Foeniculum vulgare* - Fennel
- *Zinnia* - Zinnia
- *Scabiosa* - Pincushion Flowers
- *Tagetes* - Marigolds
- *Dahlia* - Dahlia
- *Callistemon* - Bottlebrush
- *Lantana* - Lantana
- *Buddleja* - Butterfly Bush
- *Cosmos* - Cosmos
- *Echinacea* - Coneflowers
- *Erysimum* - Wallflowers

### Native Nectar Plants:

- *Achillea millefolium* - Yarrow
- *Arctostaphylos* - Manzanita
- *Ceanothus* - Wild Lilac
- *Encelia farinosa* - Coast Brittlebush
- *Ericameria* - Rabbitbrush
- *Erigeron glaucus* - Seaside Daisy
- *Eriogonum* - Buckwheat
- *Peritoma arborea* - Bladderpod
- *Ribes aureum* - Golden Currant
- *Salvia clevelandii* - Cleveland Sage
- *Salvia spathacea* - Hummingbird Sage
- *Solidago californica* - Goldenrod

## Threats

- Habitat Loss & Degradation
  - ▶ Private Property

- ▶ Pruning
- Pesticides
  - ▶ BT (a non-toxic, naturally occurring biological larvicide)
  - ▶ Neonicotinoids (a common class of insecticides derived from nicotine)
- Climate Change
  - ▶ Milkweed too toxic
  - ▶ Unknown ???

### **Avoid Tropical Milkweed *Asclepias curassavica* or *A. tuberosa***

- Can harbor OE - *Ophryocystis elektroscirrha* a deadly parasite
- Does not go Winter dormant
- IF you must have it, cut to ground in Fall (Oct–Nov), and repeatedly through winter.
- Providing year round larval food sources may send mixed signals. This may have a negative effect on migration.
- Climate Change: With temperature rising Tropical Milkweed is becoming too toxic (cardenolides) for Monarchs.

### **OE - *Ophryocystis elektroscirrha***

- Decreased larval survival
- Smaller wing span & lower body mass
- Decreased male reproductive success & Shorter Adult lifespan
- Less activity & weight among females
- Diminished Condition & Activity: Wings tattered & Scale loss

### **Conservation - Action Items:**

- Protect CA Winter Sites
- Restore Breeding & Migratory Habitat in CA
  - ▶ Native Milkweeds
  - ▶ Pollinator Gardens
- Protect Habitat from Pesticides
- Restore Breeding & Migratory Habitat outside of CA
  - ▶ Regional Milkweeds
  - ▶ Pollinator Gardens
- More Research on how to best aid Monarchs

### **Citizen Science:**

- The Monarch Monitoring Larva Program <https://monarchlab.org/mlmp/>
- Participating in Winter counts
- Tagging Monarchs
- Raising Monarchs Responsibly

### **Conservation - What you can do:**

- Create a diverse habitat.

- ▶ Year round Nectar sources
- ▶ Colorful
- Pesticide-Free
  - ▶ Use IPM (Integrated Pest Management) methods & avoid chemical use.
- Plant your locally Native Milkweed only!
- Do not plant Milkweed if you live within 5 miles of Winter Sites.

## Resources / References / Credits

- Photos in the presentation by Rebecca Schoenenberger, unless noted otherwise.
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