Milkweeds and Monarchs: Let’s Bring Monarchs Back to Central Oregon

Tom D. Landis
Retired US Forest Service
Nursery Specialist
Monarchs & Milkweeds Workshops

This is Workshop No. 71
The Bad News – Decline of Pollinators All Over the World

Bees & Butterflies are especially threatened
The Good News – Creating Pollinator Habitat Works!

January 1, 2016:
Tagged monarch from Coyote Trails Nature Center in Medford Was Found in Bolinas, CA
A monarch named “Journey” that was raised, tagged, and released from Sisters Middle School in October 2016, has been seen twice in 2017 at overwintering sites near Carpinteria, CA.
Why Monarchs?

- Iconic - Most Well-Known Butterfly in the World
- A Tropical Butterfly that has Adapted to a Wide Range through Migration
- Monarch Butterflies Weigh 0.02 oz (0.5 g) – Half the Weight of a Paper Clip
- They can fly over 40 miles per day & migrate 1,000 to 2,000 miles to overwinter
Eastern Monarchs Overwinter in Mexico
Western Monarchs on California Coast
How Can You Help?
Report Milkweed Locations, Monarch Sightings, and Egg or Caterpillars

https://www.monarchmilkweedmapper.org/
Monarchs & Milkweeds in Central Oregon

https://www.monarchmilkweedmapper.org/
Central Oregon is Critical Habitat for Migrating Monarchs

- Shaded areas are prime monarch breeding habitat
- Black dots are overwintering sites

(Stevens and Fry 2010)
Western Monarch Migrations

When are Monarchs Seen in Central Oregon?
Monarch Life Cycle

3-4 days

Egg

10-14 days

Caterpillar

14-35 days

Chrysalis

10-14 days

Adult

Summer Life Cycle = 6 to 10 weeks
Multiple Monarch Generations per Year

1. March/April: Eggs laid by females after overwintering. Adults live 6 to 10 weeks

2. May/June: Adults live 6 to 10 weeks

3. July/August: Adults live 6 to 10 weeks

4. Sept/March (Super Generation): Adults live 6 to 7 months
Why are Pollinators Important?

Pollinators are Required for Many Food Crops

Cross Pollination Ensures Genetically Diverse Seeds

Pollinators are Required for Many Food Crops

Blue orchard bee
Monarch Magic & Mystery: More Than Just Benefits to Humans

Super Generation of Monarchs Travels Thousands of Miles to Overwinter in Mexico or Southern CA – Places They Have Never Been Before
Causes for Population Crash of Monarch Butterflies

- Overwinter Habitat Loss
- **Breeding Habitat Loss**
- Disease and Parasites
- Climate Change
- Pesticide Use

Creating Habitat is Something We All Can Do: Food, Shelter, & Water
Loss of Milkweed Breeding Habitat in the West

Mowing, Spraying, and Invasive Weed Competition Are the Major Culprits
Pesticides & Pollinators
How Can You Help?

http://www.xerces.org/wings-magazine/neonicotinoids-in-your-garden/
http://blog.nwf.org/2015/12/four-questions-about-neonicotinoid-pesticides/
How Can You Help?
Create Pollinator Habitat

Monarch Waystation
These Specialized Pollinator Gardens Provide Habitat (Food, Shelter, and Water) for Monarch Butterflies on their Long Migrations

**Food:**
Native Milkweeds for Monarch Caterpillars

**SHELTER:**
Woody Trees and Shrubs Protect Monarchs at Night and During Bad Weather

**Food:**
Nectar Plants for Monarch Adults and Other Pollinators

**Water:**
Mud Puddles Provide Moisture and Minerals
Why Use Native Plants?

1. Native plants are adapted to local environment
2. Introduced plants often become noxious pests

Orange Hawkweed - First Found in City of Sisters Welcome Garden in 2004
Creating Pollinator Habitat: Food = Nectar Plants

Adult Butterflies Get Sugar from the Nectar in Flowers

- Sugar Content of Nectar Ranges from 8% to 50%
- Nectar also Contains Vitamins, Oils & Amino acids
All Plants Have Pollen, But Not All Plants Have Nectar

California poppy has no nectar

**Pollen**: small powdery particles produced by anthers (male flower organs) that is carried by pollinators to fertilize the female flower organs and produce seeds. Pollen provides vital protein and fats; honey bees use it to make bee bread.

**Nectar**: sugary substance, produced by some plants to attract pollinators (bees, butterflies and hummingbirds). Sugar is metabolized for energy or stored as fats.
Nectar is Stored as Fats in Monarch Butterflies

Nectaring in Late Summer Builds Up Fat Reserves for Migration & Overwintering

Nectar corridors are critical for successful migration
Which Nectar Plants are Native Here?

Regional Pollinator Guides
http://www.pollinator.org/guides.htm
Contents for Plant Species or Group

Organized by Flowering Period:
- Early-Season
- Mid-Season
- Late-Season

Goldenrods: West coast Canada goldenrod, (Solidago chrysantha), threecervene goldenrod (S. velutina)

Goldenrods are common native plants that provide excellent pollen and nectar for bees, butterflies and other pollinator insects in the late summer and fall. Both native and honey bees use pollen from goldenrods to provision their nests, and monarch butterflies use goldenrod nectar to build up their body fats for their long migrations and overwintering.

Goldenrods are excellent late blooming nectar plants that are hardy and easy to grow.

Plant Form: Perennial herbs
Nectar: Bees and butterflies
Host Plant: No
Propagated by: Seeds

Goldenrods are especially important for monarch butterflies as they migrate south in the fall.

Bloom Times

References:
Nectar Plants for Monarch Waystations – Spring Bloomers

Oregon grape

Red-flowering currant
Nectar Plants for Monarch Waystations – Summer Bloomers

Netleaf agastache

Coyote mint
Nectar Plants for Monarch Waystations – Fall Bloomers

Rubber rabbitbush

Douglas Aster
Creating Pollinator Habitat:
Food for Caterpillars = Host Plants

- Different butterflies have different host plants
- Larvae (caterpillars) only eat milkweed leaves
Native Milkweed Species

Narrowleaf milkweed

(*Asclepias fascicularis*)

ASFA
Native Milkweed Species

Showy milkweed, \((Asclepias speciosa)\)

ASSP
“Combo Plants”: Both Hosts & Nectar

Oceanspray, *Holodiscus Discolor*, HODI

Also *Lupinus* spp. *Ceanothus* spp.
Creating Pollinator Habitat: Shelter

Develop a Perimeter or Border of Woody Pollinator Plants & Trees

Lewis’ mock orange, *Philadelphus lewisii*, PHLE4

Mountain lilac, *Ceanothus integerrimus*, CEIN
How Can You Help?
Grow or Buy
Locally-Adapted
Milkweeds or Nectar Plants

Range of Showy Milkweed

Source: Monarch Watch
Milkweed Seed Propagation Methods

Don’t Sow Too Deep

Sowing Germinants

Direct Seeding
Milkweed Seedlings Need Stabilized Media Containers

Milkweed seedlings are slow in forming a firm root plug.

Jiffy Pellets are held together by plastic mesh.

Earthpots are covered with biodegradable paper.
Milkweed: Vegetative Propagation

Rhizome: An Underground Stem

Narrowleaf Milkweed Rhizome

Showy Milkweed rhizome
Pollinator Habitat: It’s More Than Just Monarchs

Franklin’s Bumblee Is Thought to be Extinct

Xerces Blue Butterfly is Extinct Due to Human-Caused Habitat Loss

Monarch Waystations are Something Positive that We Can Do
Thomas D. "Tom" Landis
Native Plant Nursery Consulting
E-mail: tdlandis@aol.com

Southern Oregon Monarch Advocates (SOMA)
http://www.somonarchs.org/
High Predation of Eggs & Caterpillars – Need for Controlled Rearing

95% Loss of Eggs & Caterpillars in the First Week
Predation is a Serious Problem, So Collect and Protect Eggs and Caterpillars

Ants & spiders are major predators of monarch eggs

“Yellow jackets are extremely efficient caterpillar-killing machines”
– Al Shapiro
Controlled Rearing of Monarchs in Schools

A good introduction to the importance of native plants to ecosystem health & function

Photo by Katie Hone
Every Monarch Released is Another Little Miracle

Southern Oregon Monarch Advocates Have Raised and Released: 2,116 Monarchs in 2015; 1,605 Monarchs in 2016