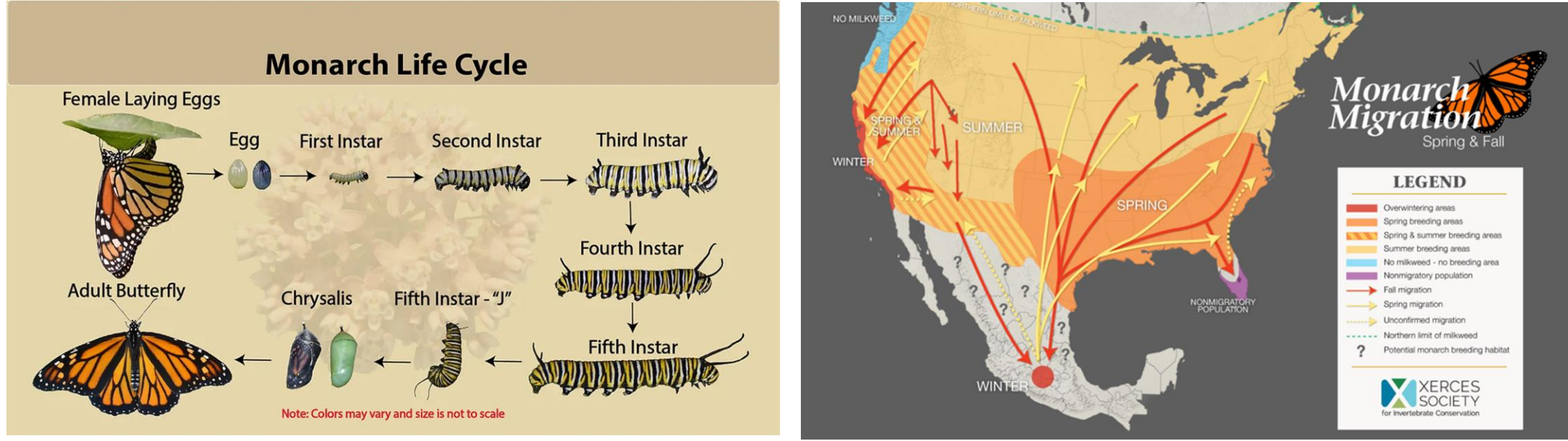


Monarch Habitat Tips for Napa County

Due to habitat loss, pesticides, disease, and climate change, the monarch population has declined >95% since the 1980s. Land managers play an important role in reversing the monarch and native pollinator decline by planting and maintaining high quality habitat. Plant a combination of native milkweed and drought tolerant nectar plants for pollinators to feed on. Some great native nectar plants found in Napa include aster, goldenrod, fuchsia, yarrow, buckwheat, and coyote brush. Water new plants until established and mulch to keep weeds out and water in.

Monarch Life Cycle:

The monarch egg stage lasts 3-6 days. Once the caterpillar hatches, it is in the larval phase for about two weeks (1st-5th instar). After reaching the 5th instar, the caterpillar will pupate into a chrysalis that lasts 10-14 days. Adults can live 2-6 weeks. When monarchs overwinter in coastal forests, they hibernate and can live up to 9 months.

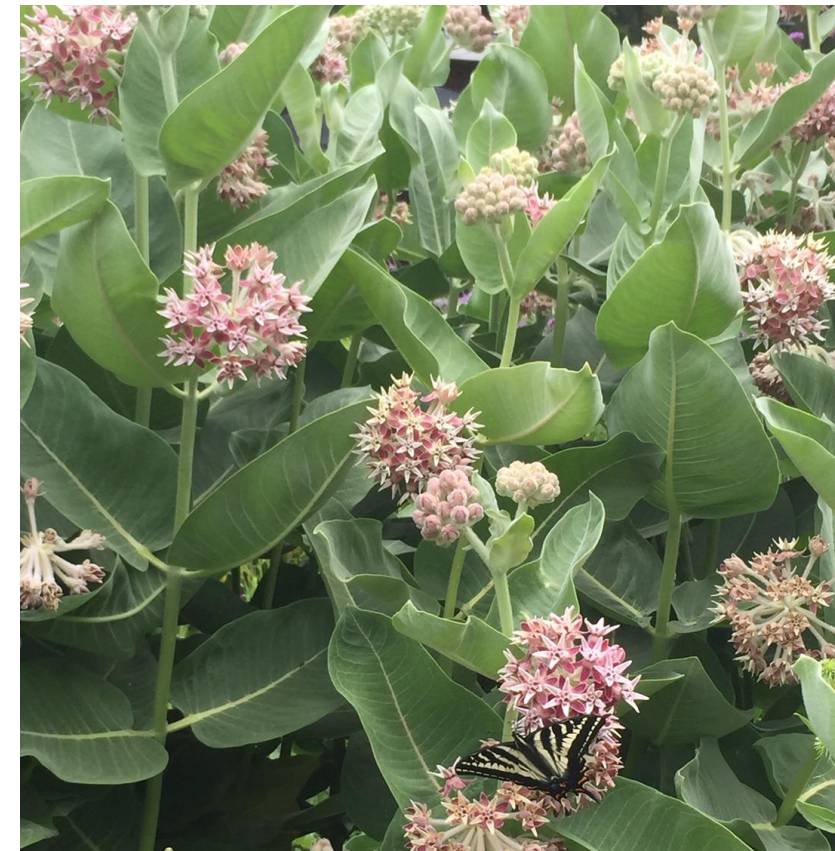


Native Milkweed:

Did you know milkweed is the only plant that monarchs will lay eggs on and that caterpillars can feed on? There are four native milkweed species found in Napa County.



Narrowleaf milkweed (*Asclepias fascicularis*) with a monarch



Showy milkweed (*Asclepias speciosa*) with a swallowtail



Woollypod milkweed (*Asclepias eriocarpa*)



Heart leaf milkweed (*Asclepias cordifolia*)

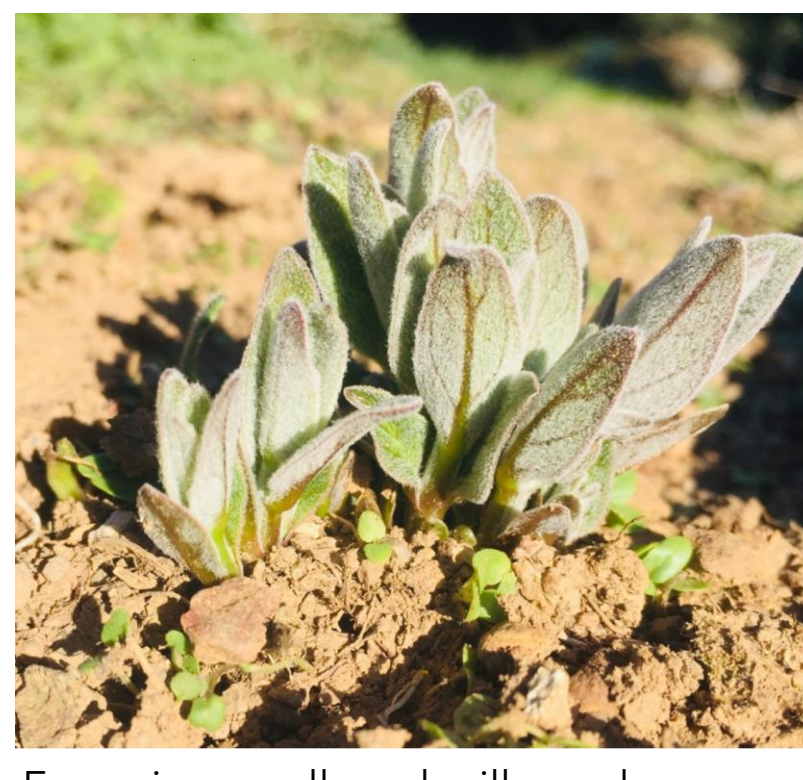
Native milkweeds are deciduous perennials, which means they will go dormant in the winter and reemerge in the spring! Mark where you plant your plants because they will come back as small discreet buds. Plants are drought tolerant once established and prefer full sun.



Emerging narrowleaf milkweed



Emerging showy milkweed



Emerging woollypod milkweed

DO NOT Plant Tropical Milkweed:

Tropical milkweed is non-native and doesn't go dormant in the winter. It can carry a parasite called *Ophryocystis elektroscirrha* (OE). OE infections are linked to reduction in body mass, diminished reproductive success, and shortened lifespans of monarchs.



Tropical milkweed (*Asclepias curassavica*)



Monarch infected with OE

Minimum Spatial Buffer for Pesticide Drift Protection:

- 125ft. from neonicotinoids or systemic insecticides.
- 60ft. from all air blast sprays (including sulphur).
- 40ft. from all ground-based applications.

If distance can't be met, install a dense vegetative barrier fence.

Follow IPM and BMPs on adjacent agriculture fields.



Oleander Aphids and Late Season Aesthetics:

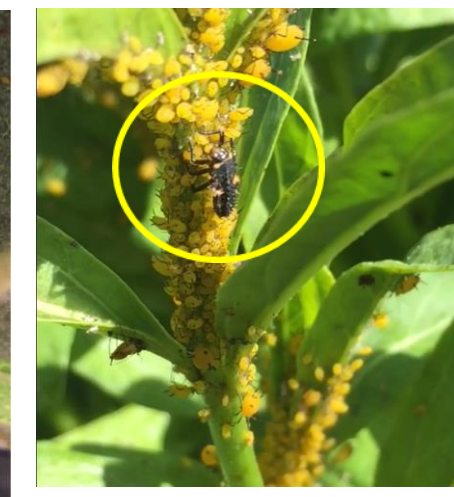
The best control for oleander aphids begins early and often. Remove them with your fingers and let beneficial predators do the work. Do not spray plants! As milkweed matures in the late summer, leaves begin to brown. To the untrained eye, this might look "ugly". This is not the time to cut it as monarchs will still use this habitat.



Lacewing larva feeding on aphids



Syrphid hover fly larva feeding on aphids



Lady bug larva feeding on aphids



Caterpillars feeding on a browning narrowleaf milkweed

Timing Management Activities:

Our main goal with reintroducing native milkweed is for it to be eaten by monarch caterpillars! Hold off on intrusive management until winter when the plant is dormant, and all monarch activity has passed.



Monarch Signs To Look For:

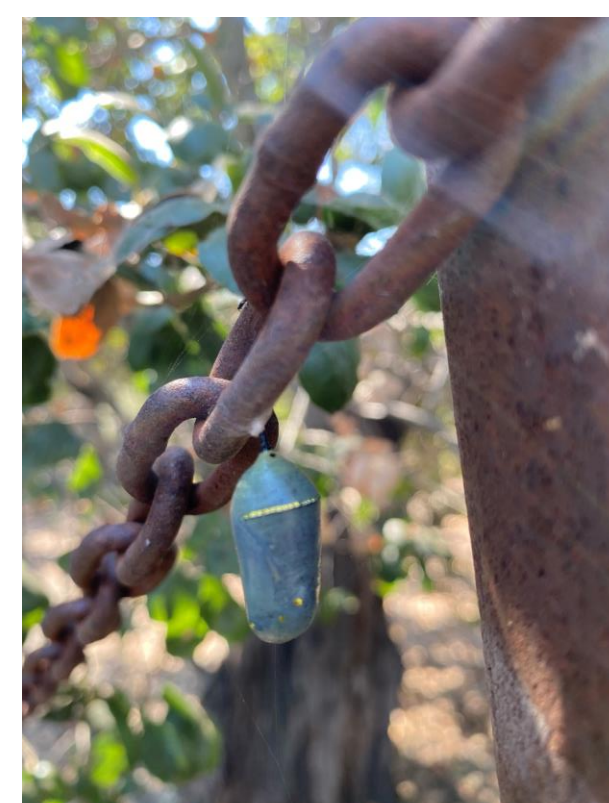
Monarch eggs are about 1.2 mm high and 0.9 mm wide, football shaped, cream colored, with ridges running from the tip to the base. When closer to hatching, the caterpillar head can be seen as a black dot. Caterpillars can travel over 30 feet to pupate. They look for a solid natural or man-made surface safe from rain, wind, and predators.



Monarch egg close to hatching



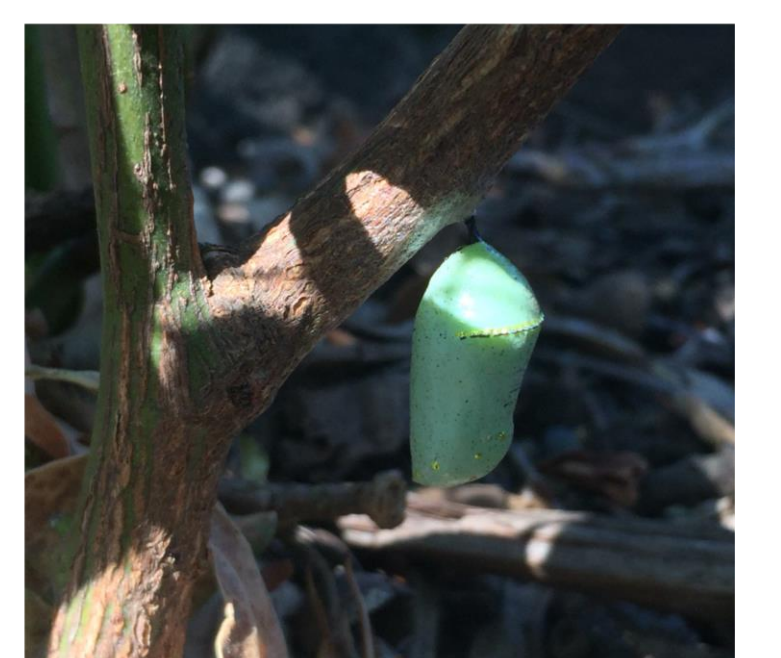
Monarch egg on woollypod milkweed



Chrysalis on chain



Chrysalis casing after monarch emerged



Chrysalis on woody plant stem