

# Southwest Monarch Study

CITIZEN SCIENCE RESEARCH,  
EDUCATION, AND CONSERVATION

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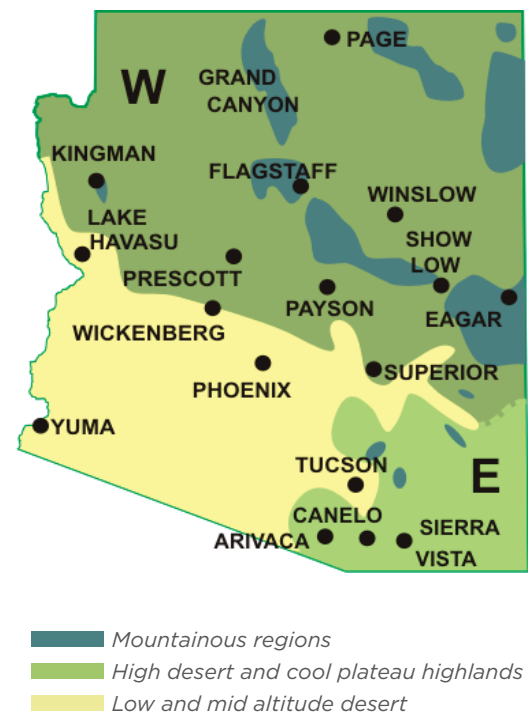


## Monarch Habitat Restoration in Arizona

There is a push to support dwindling monarch butterfly and pollinator populations in the West. Many public land managers are at a loss as to which plant species are best to add to their existing native plant palette for restoration. Since 2003 the Southwest Monarch Study has researched the monarch migration and breeding habitats in the Southwestern states. Our data collection includes recording milkweeds and nectar sources monarchs favor in Arizona. This publication reports our recommended best species that can be used to supplement an existing habitat. It can also serve as a checklist to determine if a habitat could be considered “monarch ready,” and suitable for their migration and breeding.

## Planting Zones

Arizona has five climate zones but for simplicity we’ve divided the state into three regions, subdividing the middle elevations into West and East for nectar distribution. Protocols for identifying species of *Asclepias* were designed using herbarium and other resources (Kearney and Peebles, 1961, Woodson, 1954). For the purpose of this study we used the following divisions to identify elevations in Arizona: Low and Mid Altitude Desert (below 1,067 m) including Phoenix, Tucson, Lake Havasu, Parker and Yuma, High Altitude Desert and Cool Plateau Highlands (1,067 m to 1,829 m) including Prescott, Payson, Patagonia, Canelo and Sierra Vista, and Cold Mountainous Regions (above 1,829 m) including Flagstaff, Pinetop/Lakeside, the Grand Canyon and Springerville and Eager (Davison, 1999).\*



\*Morris, Gail M., Christopher Kline, and Scott M. Morris. "Status of *Danaus plexippus* population in Arizona." *The Journal of the Lepidopterists' Society* 69.2 (2015): 91-108.

## Milkweeds



*Female monarch ovipositing on A. subulata. Photo by Michelle Shrader.*

Milkweeds (*Asclepias* spp.) are the only host plant for monarch butterflies. In Arizona's low humidity and temperature extremes, a higher density of monarchs is always found in breeding grounds near riparian areas. When possible, look for restoration sites near cienegas, rivers, creeks, seeps and ephemeral streams. Trees and tall shrubs that are naturally part of these locations are a refuge from inclement weather and provide shading from our harsh summer sun as well as a night roost. Don't overlook natural swales or roadside ditches where rainwater tends to accumulate. Habitats can also be created where road drainages are steered to a lower depression that mirrors a natural moist area during our rainy seasons.

Around 30 species of Milkweeds (*Asclepias* spp.) are native to Arizona. Some are common and available for restoration while others are less common — even rare. Recently there has been a trend to plant milkweeds that are not native to a region. We discourage this since the long-range effects are unknown and could do more harm than good. Monarchs have been documented using the listed native species throughout their range. Based on research by the Southwest Monarch Study, monarchs favor these milkweeds in Arizona public lands, rural areas and cities.

## Nectar Is Critical in Arizona

While *Asclepias* spp. is crucial to the monarch life-cycle, adult monarchs also need nectar, especially during the Spring and Fall migration. Monarch butterflies will lay their eggs on milkweeds that are not yet in bloom. Adult monarchs are more likely to visit breeding habitats with Spring blooming annuals, perennials, shrubs and trees. Monarchs are often reported nectaring on trees in flower in the Spring. During the summer, they primarily visit milkweed in bloom. As the season progresses and the migrating generation ecloses in September, adult monarchs need to build up lipid stores from high quality nectar producing flowers for migration and overwintering. This migrating generation will not breed until next Spring, so Fall adult monarchs primarily need nectar sources rather than the *Asclepias* spp. essential earlier. (Breeding monarchs live two to five weeks; Migrating monarchs can live to nine months.)



*Migrating monarchs feeding on *Ericameria nauseosa* 9-18-16 Silver Creek Fish Hatchery*