



HAND-REARING MONARCHS

Monarch butterflies, with their recognizable orange, black and white pattern, are known for their incredible migrations from Mexico all the way to Canada and back. They are a memory of childhood and an image of summer. They appear in Missouri during spring to begin a new generation and return once again during the fall migration as they head to Mexico. Since the 1990's the size of the eastern population has declined more than 80 percent. This decline has drawn individuals to assist monarchs with their cause. Monarchs have become icons for conservation as welcome insect visitors to our gardens and symbolize the role that all people can play in conserving a species.

Monarchs, like many other butterflies, rely on just a few types of plants to rear their young. Monarch caterpillars feed only on milkweed (*Asclepias* spp.) to develop from larvae to chrysalis. Many people have discovered that monarchs are easy to rear at home, at school and other places as long as one has enough milkweed leaves for the caterpillars. Rearing a monarch butterfly enables people of all ages to share in the amazing transformation of a caterpillar into an adult butterfly. This activity can also inspire individuals to become more involved in monarch conservation through education and participation in research.

Missourians for Monarchs understands that rearing small numbers of butterflies can offer benefits for education, outreach, connecting with nature, and community science. Individuals and groups who bring wild-collected eggs and caterpillars into captivity are encouraged to follow protocols for safe rearing and data collection for programs such as the Monarch Joint Venture and Project Monarch Health. However, as with any wild animal, we must ensure our good intentions do not inadvertently harm their survival. Conservationists and scientists have noted serious concerns about using captive breeding for the conservation of monarch butterflies and whether captive breeding may help or hinder their populations.

Missourians for Monarchs agrees there are several issues with captive rearing that should be understood before embarking on rearing monarchs in numbers.

1. As with any animal, there is a concern with the spread of disease. Rearing monarchs together at higher densities than in the wild may inadvertently expose them to diseases that could be transmitted to the wild populations if poor hygiene and disinfecting are not undertaken.
2. Research has shown captive-reared monarchs may be less fit than those that grow outside in a natural environment. A recent study found captive-reared monarchs to be significantly smaller and less likely to survive their migration and overwintering in Mexico.
3. Recent studies have found that monarchs raised indoors may not orient southward, as needed, for their migration to Mexico upon their release. In addition, monarchs raised for as short as one or two generations in captivity can adapt to artificial conditions different from the wild. Conditions experienced in captivity can differ significantly from those in the wild in terms of temperature, moisture, light intensity, day length, food sources, density, presence vs. absence of predators and more. When this happens, researchers see a high frequency of genetic traits that would be harmful or result in a lower survival rate for these individuals and their offspring. There is broad agreement among the monarch scientific community that captive breeding and/or mass releases can introduce unnecessary risks to wild monarch populations.
4. Large-scale captive rearing and subsequent release can limit the ability of monitoring programs to understand natural population dynamics. To better understand and protect the monarch, researchers and community scientists carefully track the size, migration, and geographic range of the monarch population. When captive-reared monarchs are released in places or at times when they are rare or not naturally present, it confounds our ability to document the actual state of the wild monarch population. Releases at times and locations where monarchs are not normally present may lead to false measures of monarchs' "occupancy" of the landscape. If we know releases occur, this could potentially lead scientists to disregard valid observations.





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5. Collection of monarchs from one area, subsequent breeding, and translocation to other areas could distort estimates of genetic diversity and gene flow in wild monarchs. Releases that occur during times of the year when natural monarch abundance is low (such as in early spring) have unusually large influences on monarch ecology and genetics.
6. Finally, there are no studies or other evidence that show releasing captive-reared monarchs boosts the wild population. If our intent is to help monarchs, we need to carefully examine the risks of captive rearing.

There are more effective ways to conserve these magnificent animals than captive rearing, which is unproven in helping monarchs. We should address the fundamental reasons the species is in trouble and support the needs of the monarchs. Monarchs need

1. Sufficient breeding habitat (milkweed and nectar plants)
2. Areas safe from pesticides
3. Adequate overwintering habitat in Mexico
4. Protection from severe storms and droughts caused by climate change

Missourians for Monarchs understands that a child (or an adult) can have an incredibly rewarding learning experience with monarchs through an up-close relationship by rearing them from egg or caterpillar. This experience can also bring people closer to nature and instill a conservation ethic. However, hand-rearing should be done on a very limited basis. Missourians for Monarchs recommends individuals who value monarchs and who wish to contribute to monarch conservation should engage in activities proven to benefit monarch populations, such as

1. Plant monarch native habitat. Whether it's 100 acres or 100 square feet, monarchs benefit from the addition of native milkweed and nectar sources.
2. Volunteer on projects for community-science-based habitat monitoring and/or habitat restoration.
3. Support natural habitats with diverse ecological communities where monarch populations can be self-sustaining.

