



# The Plight of the Monarch

Article and Photos by CLINTON FAAS

*(Writer's note: TWA's Conservation Initiatives promote landscape-level conservation of habitat and species as well as address current issues affecting landowners in Texas. Through monitoring and working with state, federal and non-governmental organizations, TWA aims to provide relevant and up-to-date information for its members regarding these topics. The Monarch Butterfly represents one such topic that allows land managers to come together with many focus groups to reach a common conservation goal in the management of a declining species.)*

It's an iconic species — one that doesn't require a background in entomology to identify. The orange and black wing pattern is easily recognizable to anyone that has ever watched a butterfly in the past. Although there are imitators, the Monarch (*Danaus plexippus*) is one of the most well known butterflies in the United States. It brings back a sense of nostalgia for many of us: thoughts of insect collections as a kid and mason jars with holes poked in the metal lids, the coming of fall and the arrival of spring and, even if unknowingly, a connection to wildlife in a busy, urbanized world. But where have they gone? And, some may ask, "Why does it even matter?"

As recently as the 1990s, an estimated one billion monarchs made the migration south, through Texas and into Mexico. A 2013 count revealed that the long-term average number may have declined up to 90 percent in the last 20 years, leaving the total United States population at around 33 million. Several factors have been attributed to this decline. In the northern United States, a significant decrease in milkweed abundance, due to modern agricultural practices, may be a limiting factor. While in Mexico illegal logging in the overwintering grounds continues to cause concerns. In Texas, several factors may be at work including a decrease in fall nectaring plants, increased pesticide use and a decrease in milkweed abundance. To understand how these affect the monarch, we must understand their complex life history.

In one life cycle, the monarch undergoes



The iconic Monarch butterfly is easily recognizable with its black and orange wing pattern.

complete metamorphosis consisting of four stages: egg, caterpillar, chrysalis and adult. This process takes approximately 30 days to complete.

One extremely important thing to note is the exclusive use of milkweed (*Asclepias spp.*) for egg laying and larvae (caterpillar) food. The caterpillars take in and store specific organic compounds found in these milkweeds that makes them toxic to, and subsequently avoided by, predators.

After the adult butterfly emerges from the chrysalis, they are soon able to fly and seek out nectar plants to feed. The

complexity of this life cycle comes in the lifespan and timing of events. Migrating monarchs live all winter, approximately six to nine months. The last adult generation to hatch in early autumn migrates down, through Texas to central Mexico where they overwinter as reproductively inactive adults. In the spring, this generation begins its migration north.

Upon encountering milkweed, they will mate and lay eggs. The next generation of monarchs will then complete its life cycle and continue the migration. The repetition of this cycle is responsible for populating the





Milkweed is an essential part of the monarch life cycle, making up the entire diet of the caterpillars.

majority of the United States. The summer generation's life span is approximately two to six weeks.

The habitat needs of the monarch vary greatly depending on the timing of the migration because of the complex life style. One of the most important aspects of habitat is the milkweed component. In Texas, we have 37 different species of milkweed. Because of our location on the migration route north, the diversity and distribution of these plants are extremely important. Although much effort is underway to plant milkweed in urban areas and gardens, many of these species can also be found on native rangelands. The second most important component is nectar plants. These flowering plants provide a food source for the adults to accomplish the long migrations. While flowers may be plentiful during the spring due to rainfall, one must also consider the availability of nectaring plants for the fall migration south. Since the vast majority of monarchs in the United States migrate through Texas, we are one of their last stops to replenish their reserves for the winter.

So why does all this matter? There are several considerations here. First and foremost is the drastic decline of a species in a relatively short period of time, a species that we all know and have some connection with, a species that has the possibility of not being around unless something is done. We as people must do what we can to reverse any negative impacts we are having on what was once a very abundant species. In

doing this, we may learn that we can help a number of other species as well. This brings us to another consideration, the idea that there may be something bigger at stake.

Throughout the year, the monarch selects for the various habitat types that contain milkweed and the other flowering plants.

These habitats, and many of the same plants, provide important resources for other species as well — namely, grassland dependent birds. Whether its seeds from the plants themselves, or other insects that are attracted to the plants, many grassland bird species directly overlap with the habitat selection of the monarch. Long term averages show birds like the loggerhead shrike, dickcissel, scissor-tailed flycatcher and grasshopper sparrow, to name a few, have seen similar population declines.

While these species may not register on everyone's radar, another iconic animal, the bobwhite quail, certainly does. In a very similar way, albeit happening over a longer period of time, the bobwhite quail has seen drastic decreases in its overall abundance and range. Although the list of grassland bird species brings with it an equally long list of hypothesis about what may have caused the decline, common ground can be found in the habitat used by all. There is a caveat to all this, though. Since no single cause can be attributed to all the declines, no one management strategy will suddenly cause an upturn in the populations. What we can do on our end is to promote the components of the habitat that is used in common.

Prescribed fire, duration and timing of grazing, mechanical manipulation and planting are all tools in the proverbial toolbox that can help reach the desired goal. Landowners/managers do not have to approach this problem alone. Farm Bill programs such as EQIP, CRP and CSP are available to provide financial assistance to those interested in the management of these species. Other groups such as the Oaks and Prairies Joint Venture provide funding to qualifying land management practices on a more regional basis. To find out how you can get involved in management for both monarchs and grassland birds, contact your local USDA Natural Resources Conservation Service or Texas Parks and Wildlife Department. 🌱








Online  
texas-wildlife.org




CONNECT WITH TWA





Queen Butterfly (Photo by Clint Faas)

Monarch Butterfly (Photo by Larry Jay)

The butterfly pictured in Plight of the Monarch in your January issue of *Texas Wildlife* magazine was incorrectly identified as a Monarch. That butterfly (above left) is actually a Queen Butterfly. The Monarch Butterfly can be distinguished by a lack of internal white spots on the underside of the back wing and thicker black lines on upper wing as seen above in the photo on the right. TWA magazine staff regrets the error.

