

What's Growing On?

BASTROP COUNTY MASTER GARDENER ASSOCIATION

September 2024



Field Crickets

By Wizzie Brown

Field crickets seem to be popping up in large numbers in Central Texas lately and the big question that I receive is WHY? Adults are out and about in the fall because it's mating season and they need to mate and lay eggs before they die from old age or cold winter temperatures. Crickets overwinter as eggs in the soil.

Field crickets are about one-inch long when fully grown and dark brown to black in color with large hind legs used for jumping. They also have two cer-

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ci, or appendages that come off the tip of the abdomen. Female crickets have a large sword-like structure, the ovipositor, protruding from the tip of the abdomen (image on left). The ovipositor is used to deposit eggs into soil.

Crickets feed on plant material as well as other insects. They can cause damage to seedlings and sometimes large populations can be destructive. Large masses of dead crickets around doorways or other areas can be distasteful to view and cause a foul odor.

Field crickets are primarily outdoor insects but may occasionally venture indoors. When crickets do come indoors, they may bother residents with their chirping. Males chirp to attract a mate, creating the sound by rubbing their forewings together.

Cricket management is more easily accomplished in the summer when nymphs, which cannot fly, are present. Unfortunately, this usually isn't when large populations of crickets are discovered.

Before turning to pesticides to manage your cricket problems, try these ideas:

- Turn off outside lights at night or use bulbs that are less attractive to insects.
- Seal cracks & crevices where insects can enter structures.
- Remove debris stacked near the structure.
- Keep lawn & surrounding areas mowed.
- Stuff weep holes with copper mesh.

Fortunately, “cricket season” usually lasts around 4–6 weeks so they won't be here forever...until next year.

For more information or help with identification, contact Wizzie Brown, Texas A&M AgriLife Extension Service Program Specialist at ebrown@ag.tamu.edu.

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TEXAS A&M
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EXTENSION

New Website Features

Check out our website, which features project slideshows, a new photo gallery section, and an events calendar to check out upcoming activities. Find news articles and our newsletters. <https://txmg.org/bastropcounty/>

President's Message

by Terri Pierce

"Gardening adds Years to your Life and Life to your Years"—unknown



I know it doesn't feel like it now, but fall will be here soon. Fall is a busy time for a gardener and especially for a Master Gardener!! Our future is bright for our growing organization. We have so many talented volunteers. I want to thank everyone for their hard work, dedication, and enthusiasm.

Our Fall Plant Sale is in a few weeks, October 5th, and there is a lot of work to be done. We will have our member sales separately to make things a little less complicated while planning our sale. This will be the following week. In the meantime, get involved if you have not already. We've posted an invitation on our Facebook page. Invite all your local friends and families. Share our post, post on Next Door, or if you have a neighborhood page, share there. Let's make this viral in Bastrop.

Our next general business meeting is Tuesday, September 24th. Bring your old pots to repurpose at our "Pot Party" on Saturday, the 28th.

We have so many exciting plans for the Bastrop County Master Gardeners Association's future, which in turn will help our community. The spring and fall plant sales are the main fundraisers each year to support all the good we do.

As we move forward, it is my hope that we will not only plant together but also learn together, protect our environment together and once again, meet to achieve our common goals.

It is my privilege to serve as BCMGA 2024 President.

Sincerely, your 2024 BCMGA President, Terri Pierce



Volunteering

Master Gardeners volunteer in the community to teach others about horticulture. We follow the research-based recommendations of Texas A&M AgriLife Extension. Members who complete 50 hours of volunteer service in the year after training earn the designation "Texas Master Gardener." We use our title only when engaged in Texas A&M AgriLife Extension activities.

Tropical Milkweed's Impact on Monarch health and migration

by Howard Nemerov

[Part 1 of a series of articles exploring tropical milkweed and Monarch butterflies.]

Non-native *Asclepias curassavica*, commonly called Tropical Milkweed, is widely available as plants and seeds at the retail level. Seeds are simple to start because they don't need cold/moist stratification necessary with most native milkweeds to produce acceptable germination rates. Plants are easy to grow, remaining evergreen throughout the summer while native milkweeds often senesce and enter dormancy, and tropical milkweed often flowers throughout the growing season, making it an appealing landscape plant and nectar source. Perhaps the biggest attraction is that Monarch butterflies (*Danaus plexippus*) use tropical milkweed for larval hosting.

Tropical Milkweed has captured the interest of both media and academics. For example, in 2024 Nadia Hassani wrote in *Better Homes and Gardens*:

Like other members of the milkweed genus, tropical milkweed attracts butterflies, bees, and other beneficial insects, as well as hummingbirds. In midsummer—in southern climates already starting in the spring—it covers itself with gorgeous flowers in oranges, reds, and yellows on tall stems.¹

Susan Mahr of University of Wisconsin – Madison wrote:

This milkweed is a good addition to perennial borders, cottage gardens, or meadow gardens. Because it has thin stems and an open form it looks best mixed with other tall plants, so its flowers peek out from among the other foliage and flowers.²

On the other end of the spectrum, Andy Davis PhD, a research scientist at the University of Georgia, wrote an open letter to Floridians in 2024:

Tropical milkweed has exploded in Florida over the last 20 years, and this is also a new thing. People have been buying this (or other non-native) milkweed, thinking that they are helping the monarchs, but in fact, these non-native milkweeds do the opposite.

You're not going to like this first (and most important) recommendation - the OE situation in Florida is now so out of control that I'm actually recommending that people in Florida remove all of their milkweed in their own yards - both native and non-native.³

The question I'm going to explore in this serialized article is: What does recent research say about growing tropical milkweed and its effect on Monarchs?

Background on the Eastern Monarch population migration

The Monarch population discussed here lives within Eastern North America during the warm season and overwinters in the Mexican states of Mexico and Michoacan. Roosting sites are limited to Oyamel Fir forests at an elevation of 1.5 to 2 miles.

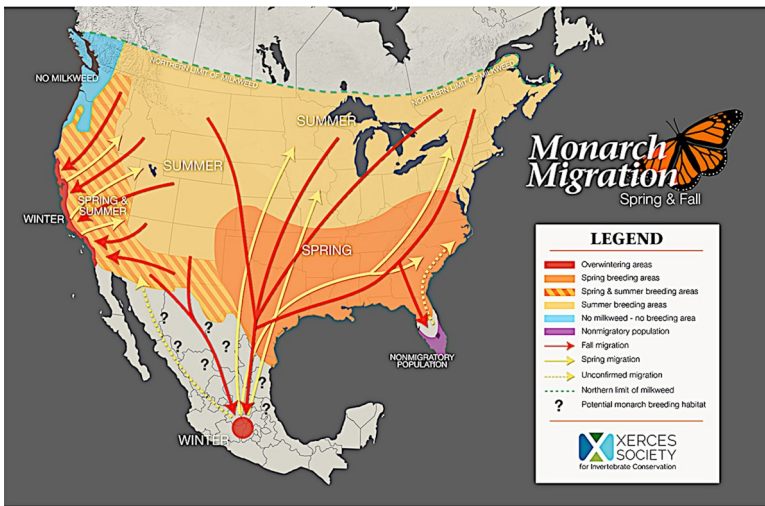
The mountain hillsides of oyamel forest provide an ideal microclimate for the butterflies. Here temperatures range from 0 to 15 degrees Celsius. If the temperature is lower, the monarchs will be forced to use their fat reserves. The humidity in the oyamel forest assures the monarchs won't dry out allowing them to conserve their energy.⁴

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There are four generations of Monarchs during their annual migration. The first generation is from eggs laid by Monarchs that overwintered in Mexico. Much of this generation occurs in Texas, as Monarchs find milkweed to lay their eggs, though some returning Monarchs may not lay eggs until farther north into the Midwest. Generation two proceeds north and east, spreading into the northern-tier United States and southern Canada. While some of the third generation fly south and west into southern-tier states from Georgia to Texas, most remains north, producing the fourth generation. Beginning in August, this fourth generation begins its journey south towards Central Mexico.⁵

Fourth generation Monarchs are influenced by “seasonally variable environments” which in this case included shorter daylength and cooling temperatures, causing them to go into reproductive diapause, a state of arrested development where Monarchs suspend reproduction.⁶ Beginning in August, this generation begins its journey south to Mexico to overwinter before returning north in the spring and begin that year’s series of generations described above.



The map by Xerces Society shows the migration routes through Texas during spring and fall.⁷ The three red lines that converge in western Central Texas is called the Central Flyway,⁸ which “traverses Texas in a 300-mile-wide path stretching from Wichita Falls to Eagle Pass.”⁹ The red arrow coming from the east and traversing the Texas coast is called the Coastal Flyway, which “embraces the coastal region of Texas along the Gulf Coast” and merges with the Central Flyway in South Texas. Both are considered “crucial paths for the eastern monarch population’s successful arrival at their wintering grounds in Mexico.”¹⁰

Reviewing migration dynamics is important when considering the following research regarding tropical milkweed.

Consuming tropical milkweed causes dangerous mutations in Monarchs

Researchers in 2022 found that migratory Monarchs had more efficient metabolism.

Flight metabolic rates in monarchs from migratory populations were reported to be significantly lower than those from non-migratory populations in Southern Florida, further supporting the idea that managing energy expenditure is a crucial trait to the dispersal and population dynamics of this species.

Monarchs raised on tropical milkweed had higher flight muscle mass and this produced “the highest energetic costs of flight.” This means flying consumes more energy for Monarchs raised on tropical milkweed. While *Asclepias syriaca* (Common Milkweed) and *A. speciosa* (Showy Milkweed)—milkweeds native to and predominant in the summer breeding range—also produced more flight muscle mass, they didn’t have the same impact on flight metabolic rates, indicating that migrating Monarchs hosting on native milkweeds maintain more efficient metabolism that helps them to reach Mexico in the fall.¹¹

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This finding corroborates earlier researchers, who found that “flight metabolic rates were lower in butterflies from a migratory population (Massachusetts), compared to one non-migratory population (south Florida).”¹²

Other researchers in 2019 compared migrating monarchs to those exposed to tropical milkweed. Citing previous research, authors noted that overwintering monarchs were in reproductive diapause:

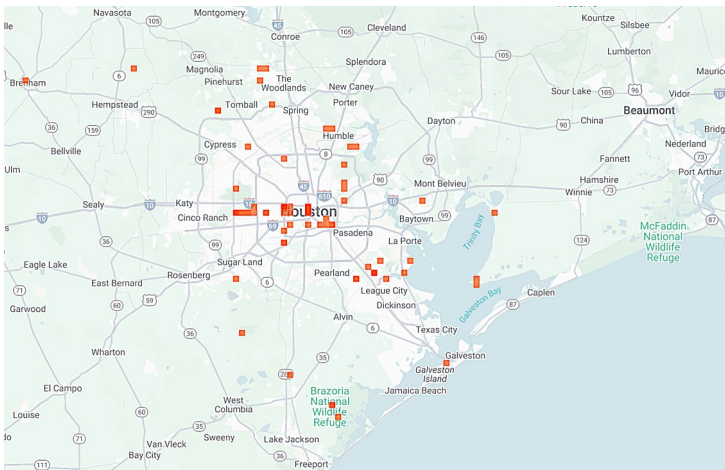
All monarchs sampled early in the wintering period at the Mexico sites have immature reproductive tracts, suggesting that long-distance migration and overwintering is more successful with delayed reproduction.

Wild female monarchs exposed to *A. curassavica* were more likely to drop out of reproductive diapause:

*Monarchs fed tropical milkweed (*A. curassavica*) as caterpillars were more likely to show reproductive activity than those fed on native *A. incarnata* (either greenhouse-raised or field-collected).*

When exposed to fall-like conditions, monarch larvae reared on *A. curassavica* were less likely to enter into reproductive diapause.

*When caterpillars were reared on tropical milkweed under autumn-like conditions, previously shown to induce reproductive diapause, both males and females were more likely to show evidence for reproductive development as adults, in comparison with monarchs reared on native milkweed.*¹³



This research is relevant when considering monarchs migrating along the Texas Coastal Flyway, which funnels migrating monarchs from the entire Eastern United States to South Texas where they join the rest of the migration on their way to Mexico. The map on the left shows iNaturalist observations of volunteer, non-cultivated tropical milkweed growing in the Coastal Flyway, enhancing the risk of causing migrating monarchs to drop out of reproductive diapause and reducing the number of Monarchs that reach their over-wintering range in Mexico.¹⁴

These researchers cited numerous studies showing that diapause monarchs have larger wing sizes, “which is thought to aid in the completion of their migratory cycle.”¹⁵ This leads to the next paper published by Soule et al in 2020, finding that larvae consuming tropical milkweed develop forewings less adapted for long flights.

*Dietary milkweed with higher cardenolide concentrations (*A. curassavica*) induced shorter, wider forewings whereas milkweed with low to intermediate cardenolides (*A. incarnata* and *A. syriaca*) induced longer, narrower forewings, which are considered better for gliding flight used during migration.*¹⁶

In 2010, researchers found that both Eastern and Western migratory monarchs have larger forewings

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than non-migratory, resident populations in South Florida and tropical locations (graph on right).¹⁷

Other researchers in 2018 found a “significant increase in the size of North American monarch forewings through time” with “certain milkweed species such as *A. syriaca* supporting especially large butterflies.” These researchers concurred that native milkweed species occurring across the summer breeding range produces monarchs more able to migrate south in the fall, with larger forewing size

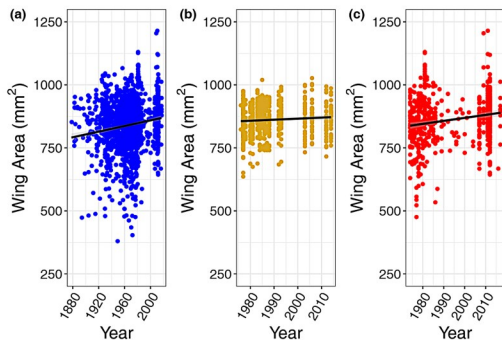
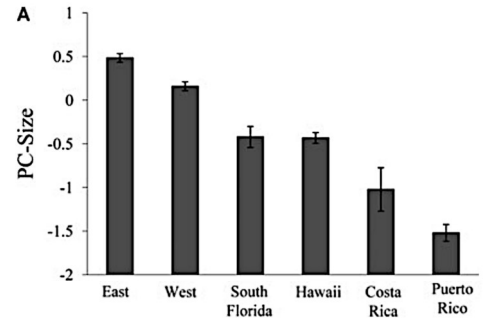


Figure 5. (a) Our dataset, including all observations, shows a significant increase through time in wing area. (b) The Flockchart data using Mexican overwintering individuals also shows a significant increase in wing area through time. (c). Our data from summer breeding butterflies, restricted to the same time interval as the Flockchart data, also shows a significant increase through time. Points shown in (a) and (c) do not include overwintering individuals. Shaded areas around trend lines correspond to 95% confidence intervals.

being an indicator of migration fitness, and monarchs who travel farther have larger wings.

*North American overwintering butterflies have forewings that are approximately 4.4% larger than those collected in summer breeding areas. Monarchs overwintering in Mexico have forewings that are approximately 1.8% larger than monarchs overwintering in California, conducive to the idea that migration distance is positively correlated with wing area.*¹⁸



To summarize, tropical milkweed correlates with monarchs less able to fly long distances, due to lower metabolic efficiency and wing size and shape less conducive to long migration

Note: In an effort to boost tropical milkweed sales as customers here more about its detrimental effects, retailers have begun renaming it. It appears at retail as “butterfly milkweed” to fool buyers into thinking it’s the native Butterfly Weed, *Asclepias tuberosa*. Other common names include Scarlet Milkweed, Bloodflower, Mexican Butterfly Weed, Silky Red, Sunset Flower, and Silkweed. In every case, the leaves and flowers look like the illustration on the right.



An *A. curassavica* sport is also available. Called “Silky Gold” or “Silky Yellow,” its flowers are all yellow (on left). No matter the name or flower coloring, these plants are not native and pose the risks to Monarch health discussed above, and further risks to be covered in the next part of this article.



Endnotes

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Calendula 'Orange Flash' is an Excellent Winter Nectar Source

by Howard Nemerov

I'm still searching for those perfect native nectar plants that flower through winter. In the meantime, I trial non-natives because if they provide for pollinators through the cool season, that's most important to me. On left is *Colias eurytheme* - Orange Sulphur: <https://bugguide.net/node/view/3248>. On right is *Allograpta obliqua* - Common Oblique Syrphid Fly: <https://bugguide.net/node/view/481>.

