

MISSOURIANS FOR MONARCHS

Created and co-edited by:
Karen Leslie & Judy Meixner



DECEMBER NEWSLETTER 2017

Master Naturalists and Master Gardeners

Franklin County Master Gardener's Demonstration Pollinator Garden

Located at McKinley and Main Streets In Union, MO

Submitted by Karen Leslie
Franklin County Master Gardener President



Design plans for the first Franklin County Master Gardener's demonstration garden were completed in October of 2016. The plans were then presented to the Mayor of Union, Mike Livengood, in February of 2017, and after 15 minutes of discussion, the FCMGs received 100 percent approval. The next step was to present the design plans to the Board of Aldermen. Once we received a 100 percent buy in from the Board of Alderman, we knew our dreams were beginning to become a reality of having our first demonstration garden. A MOA (Memorandum of Agreement) between the city and the University of Missouri Extension was approved and signed between the designated parties. On February 13th, several of the master gardeners toured at least five potential sites within the city limits of Union, with the city administrator, Russell Rost, and the Parks Director, Kevin. It was not hard for us to agree on the site. The corner of McKinley and Main Street was the perfect site for our pollinator demonstration garden (full sun, great drainage, large open lot, and located on one of the main corridors into the city of Union). The Mayor, the City Administrator, and the parks department staff were a pleasure to work with on this project. The city of Union was extremely accommodating on all their efforts for this project to be successful.

One of our own master gardeners, Bill Schwab, offered to grow all the plants to support our project. He has volunteered at Shaw Nature Reserve for many years, and has a large table in their greenhouse. Bill began the task of growing our plants from seed the first part of February, which totaled over 340 seedlings.

On March 25th, The FCMG demonstration volunteers staked the perimeter of the 104' X 63' X 36' garden, and the Union Parks Department tilled and leveled the garden the last part of April. The city also installed an onsite, underground water spigot for us.

Five additional cubic yards of top soil were delivered to the garden site for a berm. On May 12th, the FCMG demonstration garden work team created the berm, created the entrance way and made three different paths within the garden by putting down landscape fabric and 10 yards of dark mulch. Several volunteers pulled weeds and straightened up the perimeter edges of the garden.

The plants were picked up from Shaw's Nature Reserve the first of May, and planting was completed on May 24th. We planted over 340 native plants, watered all the plantings, and mulched the rest of the garden, all in 6 hours. Over the rest of the summer, 3 lilac bushes, 1 butterfly bush, 2 viburnums, 3 ninebark bushes, 3 sedum, 3 small ornamental grasses, and 2 Itea bushes were also planted.



The garden looks great and 95% of the plants survived after a lot of TLC.

The permanent signage will be installed in the garden in Spring 2018, as well as two benches that will be built by the Union Parks Department during winter 2017. We look forward to teaching the community about pollinator gardening – what plants work best and how it can be incorporated into their own yards.

Joplin gives flight to butterfly campaign

Local gardeners are going about Joplin to encourage residents to bolster monarch butterfly habitat. Volunteers with the Chert Glades chapter of Master Naturalists and other flower and wildlife lovers have taken up a cause to plant milkweed and native nectar plants as part of a program adopted by the city of Joplin called the “Mayor’s Monarch Pledge.”

“That is a program by the National Wildlife Foundation to connect the country, to keep the monarch migration going,” said Val Frankoski, a local advocate for the effort. “The monarchs have a very magnificent migration, but it is in jeopardy of disappearing.”

Monarchs winter in Mexico and southern Florida, flying north through the Midwest in April to reach the northern U.S. and Canada for summer breeding. They come back through this area in the fall as they wind their way south again to Mexico or southwest to California.

“Not every community would have this opportunity, but we are in their migratory pattern,” said Joplin’s mayor, Mike Seibert. “We have that opportunity to improve their habitat. It is a great project for us and we have so many great volunteers who wanted to be involved.”

Populations of the butterfly have declined by 90 percent over the last two decades, according to the wildlife federation. Habitat loss and the use of pesticides are the reason for the decline.

“Many people who have lived a long time remember seeing clouds of butterflies pass by in the fall, and they have not seen them lately,” Frankoski said.

Education efforts such as the mayor’s pledge are helping people understand the loss and take action, she said.

“Kids through school and much of the publicity has talked about the relationship of milkweed and the monarch,” she said. “That is the host plant which the caterpillars must eat. It’s the only one they eat, and it gives the monarch butterfly protection because it has certain toxins in it that they incorporate into their body that makes them taste very bad and be unattractive to birds especially.



"In the Midwest, we have gotten very good with agriculture and created products with genetic modifications that can have herbicides put on them. It used to be there was lots of milkweed that was inside farmer's fields or at the edges of the field and now with genetic modification the fields are clear and the edges are like cement," so there is not as much milkweed along the migration route," she said.

Frankoski and fellow naturalist, Sara Fisher, have worked on planting milkweed and other butterfly-friendly plants in Joplin's parks.



"The butterfly effect from the tornado was something that brought people here to build the butterfly overlook at Cunningham Park," Frankoski said. There were lots of flowering plants placed there that appeal to adult butterflies, but it did not have milkweed where the eggs that develop into caterpillars are laid. As caterpillars emerge, they feed on the plant.

Frankoski said there was funding left over from that garden and that it was used in the fall 2014 to establish another garden at Cunningham specifically for

milkweed.

Fisher was in charge of the overlook garden at Cunningham. She said some milkweed was added to that garden last fall. She also has planted milkweed in the sunken garden at Schifferdecker Park and in a raised flower bed in Leonard Park.

After Drury University and the TKF Foundation provided the resources for the Cunningham garden, "the master naturalists decided they would like to extend the butterfly effect, so we are partnering with the city for the Mayor's Monarch Pledge," Frankoski said.

The women also encourage those who like flower gardens to participate in Friends of the Parks, help at city parks by volunteering. "We do this for the love of it, and we think there are other people who love their parks and would like to do this in the park, too," Frankoski said.

Even if people don't want to plant milkweed, they can help by getting information from the Chert Glades Master Naturalists, which can be found on Facebook. "Whenever you can, go pull some weeds (in flower gardens) and we will have some education for them to find out which are weeds," Fisher said.

The city and the naturalists also have agreed to introduced milkweed in the wetland area along Campbell Parkway and at Ewert, Humphrey and Leonard parks. They also are working to establish native habitats at the city's latest addition to the parks system, Mercy Park.

Tips for creating a habitat:

Butterflies are attracted to flat-topped or clustered flowers of bright colors such as red, yellow, orange, pink and purple. They feed in the sun, so locate plants in full sun from midmorning to afternoon. Plant a variety to create continuous blooming times. Do not use insecticides. Give butterflies a place to rest by placing flat stones in a sunny spot in the garden. Place some coarse sand in a shallow pan in the garden to keep it moist or create a damp mud puddle for them.



Milk Jug Seed Starting

By Judy Meixner

Missourians for Monarchs—Naturalists and Gardeners

If you Google "milk jug planting" you can find a wealth of articles explaining the concept of utilizing milk jugs to get your perennial seeds started this winter. Many of our native perennial seeds require cold stratification to germinate. According to Wikipedia, "cold stratification is the process of subjecting seeds to both cold and moist conditions."

The concept is pretty simple and even though we had a very warm dry winter last year, my first attempt at growing some of our native perennial species using this method was successful. The challenge is getting enough milk jugs! I am fortunate enough to work in an office where my co-workers helped out by bringing me their empty jugs. I was able to gather over 75 last winter and the e-mail is going out again soon for this year!

So how does this work? Well, you simply cut around the milk jug at the base of the handle leaving the handle intact to act as a hinge. Then poke holes in the base of the jug to allow water to escape. Fill the base $\frac{3}{4}$ full of moist potting mix, spread your seeds on top then close the jug by taping it shut, but make sure you leave the cap off to allow rain and snow to get in. Labeling is VERY important as most seedlings are very hard to identify. I wrote right on the jugs, but had to re-label as the marker faded so this year I think I will place a label inside the jug as well.

Now place the jugs outside, preferably in a sunny spot and wait, and wait, and wait! As spring and warmer weather approach you can simply peak inside the opening and check on the progress. As I mentioned before our winter last year was very warm and dry. I did water my garden of jugs twice to ensure the soil stayed relatively moist throughout the winter months. Hopefully that won't be necessary this winter. The final step once you have seedlings with at least four leaves, is to separate them into individual containers. I opened the jugs up once I could see plants this size to allow them room to grow until I had time to transplant them. Allow the seedlings to grow a good root base then plant in your garden.



Remember it may take a couple of years to see blooms from these plants, but with this quick start you should have very nice foliage the first year.

And as a bonus, I kept the bases of the milk jugs (removing the handled section) to use as "pots" for my crop of annual milkweed (*Asclepias curassavica*) which I grow to feed any caterpillars that I find in late summer. Then once I was done I was able to add the milk jug parts to my recycling container.

Not all milkweed is equal for egg-laying monarchs

Canadian University of Guelph study reveals

Date: November 7, 2017

A team of researchers has discovered that milkweed plants in farmland have 3 ½ times more monarch butterfly eggs than milkweed growing in urban gardens, natural areas and roadsides. They also found that monarchs prefer small patches of the plant to larger ones.

"These findings are significant given that there are currently initiatives underway that involve planting milkweed to help the survival of this butterfly," said Prof. Ryan Norris, who conducted the study with PhD student Grace Pitman, lead author of the study, and Dr. Tyler Flockhart. "In some cases, the focus is on roadside planting, which based on these findings is not an ideal location."

The eastern North American population of monarch butterflies has dropped by 95 per cent in the last 20 years, putting the insect at risk of extinction. Among efforts to save the species, one strategy is to plant more milkweed.

Published in the journal *Biological Conservation*, the two-year study surveyed numbers of eggs found on milkweed in various habitats. The researchers discovered the most eggs on milkweed growing on farmland and the fewest on roadside plants.

"Female monarchs are likely attracted to agricultural lands because it is easier for them to locate the milkweed growing there," said Pitman.

"Monarchs use chemical receptors in their antennae to detect milkweed. It may be easier for them to locate the plant in croplands where it is surrounded by monocultures so there is lower diversity."

Female monarchs likely prefer smaller milkweed patches because they want to avoid male monarchs, she added.

"The males like to hang out in the larger patches and wait for the females. They tend to harass them, and if the females are looking to lay their eggs, they don't want to be harassed."

Norris said it is unclear whether the butterflies simply avoid urban roadsides or whether their eggs fail because of the harsher environment there.

"There are a lot of factors that put the monarchs and their eggs and adult females at risk, including getting hit by cars, road salt and the frequent cutting of vegetation."

He said organizations should rethink investing in milkweed planting projects along roadsides.

"A more effective strategy would be to develop incentive programs with landowners to plant and maintain milkweed within agricultural landscapes."

Norris is now studying whether more numerous eggs laid in farmland are leading to more adult monarchs.

He, along with PhD student Alana Wilcox and Prof. Amy Newman, is also examining the impact of neonicotinoid pesticides on eggs and on adults' migratory behavior.

"Given that we now know monarchs are laying most of their eggs in agricultural areas, we need to examine what impact factors in this environment, such as neonics, might be having on the butterfly's survival."



Bring Back The Monarchs



Update

Thanks to our funding sources, Monarch Watch and our partner nurseries were able to distribute 113,500 free milkweeds for restoration in 2017. Since the program began in the Fall of 2015, we have distributed 320,000 milkweeds! We also owe a big thank you to everyone who has worked so hard to plant and care for these milkweeds.

The Spring 2018 application is now open for habitat restoration projects located in the Monarch Milkweed Corridor. This includes most of the eastern half of the United States. South Carolina, Florida, Alabama, Mississippi, and Louisiana are not included in the grant at this time. As of 1 October 2017, Monarch Watch has secured funding for 100,000 milkweeds for Spring 2018. We are actively seeking more funding sources. If funding and seed become available for more areas, the application will be updated accordingly.

We have funding in place for distribution of another 100,000 milkweed plugs in 2018, and we are always looking for more. Planning begins now. We are currently accepting applications for Spring 2018. The link to the free milkweed information page and application is provided below. Please apply or share the link with all who might be interested in large scale (two plus acres) milkweed plantings on both private and public lands.

Through a separate grant, schools and educational non-profit organizations can apply for one free flat of milkweed for Spring 2018 at this link:

[Milkweed for Schools and NonProfits App](#)

Funding Sources : Non-Profit, Corporate, and Private

Guidelines

Free milkweeds are for large-scale (two acres or more) native habitat restoration only. Habitat restoration is defined as the practice of renewing and restoring degraded, damaged, or destroyed ecosystems and habitats. Gardens or landscaped areas do not qualify as restoration. The portion of property where milkweed will be planted must be a minimum of two acres in area. Roadsides and Trails are acceptable areas. Our recommendation for ideal monarch habitat is planting milkweed in patches of 3-4 plants, 10-13 patches per acre. Applicants must demonstrate that they have a land management plan, and that other nectar sources are either pre-existing or are included in the project. We recommend against planting large quantities of milkweed in a small area. The application is currently open to most of the eastern half of the U.S. We cannot guarantee that we will be able to provide all species listed.



MJV Welcomes the Wisconsin Department of Natural Resources



The Wisconsin Department of Natural Resources (Wisconsin DNR) is dedicated to protecting and enhancing the ecosystems that sustain all life in their state. This includes both terrestrial and aquatic ecosystems, home to a great variety of wildlife, including monarch butterflies. In order to further their monarch conservation efforts, the Wisconsin DNR has joined the MJV partnership with hopes of increasing monitoring efforts across the state and

protecting monarch habitat on both state and private lands.

"We're looking forward to furthering our partnership with other organizations working on monarch conservation, both within and outside Wisconsin," says Owen Boyle, Species Management Section Chief at the Wisconsin DNR. "Joining the Monarch Joint Venture will allow us to more fully integrate our monarch monitoring and habitat conservation work into regional and continent-wide efforts."

With tens of thousands of acres of open land with diverse prairie, savanna, and barrens plants, and resources that promote pollinator habitat, like a new guide to landscaping and natural community restoration with native Wisconsin plants, the Wisconsin DNR is providing and encouraging the creation of crucial habitat and breeding grounds for the monarch butterfly. Beyond their efforts to protect and restore monarch habitat, the Wisconsin DNR supports the Wisconsin Citizen-based Monitoring Network, which includes monarch citizen science efforts and recently funded a series of monarch citizen science trainings throughout the state.

"With a growing number of MJV partners in Wisconsin, we're already seeing the productive outcomes of local partnerships for monarchs within the state. The Wisconsin DNR plays an important role in bringing additional partners together on the state level and we're excited for them to be a part of our national effort to conserve the monarch migration!" - Wendy Caldwell, MJV Coordinator.

The Wisconsin DNR has great resources and information about current projects on their [website](#).

The Monarch Joint Venture is a national partnership of federal and state agencies, non-governmental organizations, and academic programs working together to conserve the monarch butterfly migration. The content in this article does not necessarily reflect the positions of all Monarch Joint Venture partners.

Header photo by Wisconsin Department of Natural Resources

Please visit: Monarch Joint Venture at www.monarchjointventure.org.

Forming a Colony at Cerro Pelon

by Ellen Sharp



Pato Moreno is a lucky man; he gets to walk around the beautiful boreal forest of Cerro Pelón five days a week, tracking and protecting monarch butterflies for a living. He started working as a forest ranger for CEPANAF, the state park system of the State of Mexico, in the fall of 2014. This is his fourth season watching migrating monarchs select their roosts. Recently he was joined in these efforts by three arborists employed by our non-profit, Butterflies & Their People, a project made possible by a partnership with the Monarch Butterfly Fund. The accompanying images were taken by Pato and the arborists with the project's camera.

The monarchs like to switch things up on [Cerro Pelón](#); where they will form their roosts is anybody's guess at the beginning of each season. In 2014-15, they roosted in an area called Carditos. The following year they chose an area above El Llano de Tres Gobernadores. Last season they started out in La Cañadita above La Lagunita before descending to trees above a meadow called El Aseradero (AKA Las Canoas). Trying to figure out where they'll rest this season is keeping Pato and the arborists on their feet.

Ranger Pato's Butterfly Diary: Searching for the Colony

Translated from Spanish by Ellen Sharp

November 1, 2017

The first of November we saw a lot of monarchs flying way up high, fluttering around the fir trees. The weather was cloudy and chilly and we left work late without seeing any signs of a colony.

November 2, 2017

The next day it was cold again. A little after 2 pm we saw the monarchs dispersing en masse like they always do before a storm. At 2:30 pm the sky broke open. We took shelter in a little shack we built for ourselves in a clearing in [Carditos](#). There had been such a huge quantity of butterflies flying about that I thought for sure we would find a colony when the rain passed, but no such luck.

November 3, 2017

We hiked up to the higher altitude areas of the mountain above [El Llano](#) to look for monarchs. Finally, we encountered a dozen trees dusted with butterflies at 3,400 m. This area has taller trees that are between 40 and 70 years old. The clusters on them lacked the density of a true colony; it looked more like a temporary overnight roost. This is only the second time in memory that we've seen monarchs roosting at this high an altitude; 3,000 seems to be the average height of their roosts. But they started off this high at the beginning of the 2015-16 season too. My dad, Melquiades, who had this job before I did, tells me that he never saw them up this high during the 35 years he worked as a forest ranger. That day we kept going to the very top of Cerro Pelón, where we were greeted by the sight of thousands of them, flying in circles in the sky way above where we stood on top of the 3,520-m. peak. It was a beautiful sight.

November 4, 2017

The next day was sunny and clear. We hiked back through the same area, cutting through [El Llano de Tres Gobernadores](#) around 11 am before we ascended Cerro Pelón. We saw some clustered in the trees, but once again most of them were in the sky, flying in circles. In the afternoon we descended to [Carditos](#), another one of their preferred perches. At 4 pm we observed roosts forming in five trees. There were still lots of them fluttering about, filling the air, still undecided about where to spend the night, when we started heading down the mountain.

November 5, 2017

By this point in the week we were feeling pretty exhausted from all this hiking, but we went back to the first place where we had seen the first clusters above El Llano anyway, and there it was— a colony! More than 15 trees completely full of butterflies. It was around 11 am, and we kept going to the peak of Cerro Pelón, where once again we saw thousands of monarchs circling overhead, trying to decide where to land. Meanwhile, when we checked farther down the mountain later that afternoon, the smaller colony of five trees in [Carditos](#) had filled out with much denser monarch clusters.

It was an exciting week following the monarchs on Cerro Pelón. We're wondering if they'll stay in these two sites they've just established for the rest of the season. Or will these two proto-colonies end up merging, as they have in years past. Or move to a completely different spot. The roadways down below in the valley are filled with butterflies, and they're still arriving on Cerro Pelon, which opens to visitors on November 18th. I'll keep you posted on what these new arrivals decide to do.

Ellen Sharp, PhD
Co-owner, JM Butterfly B&B
Director, Butterflies & Their People, A.C.

Pollinator Garden Grants and Programs

[Grant Application Advice: Native Plant Gardens for Schools and Urban Areas](#)

Landis shares how to avoid basic pitfalls of the grant application process, especially grants with specialized funding requirements. Great advice for any garden project seeking funding.

[American Honda Foundation](#)

Funding for youth education, specifically in the areas of science, technology, engineering, mathematics, the environment, job training and literacy.

[EPA Environmental Education Grants](#)

The U.S. Environmental Protection Agency (EPA) is accepting grant applications for environmental education projects and programs that promote environmental stewardship and help develop knowledgeable and responsible students, teachers and citizens.

[Fiskars Project Orange Thumb](#)

Winners receive cash and tools to help support their goals of neighborhood beautification and horticulture education.

[Home Depot Community Impact Grants Program](#)

Provides support to nonprofit organizations, public schools, and public service agencies in the U.S. that are using the power of volunteers to improve the physical health of their communities.

[Wild Ones](#)

Small monetary grants for schools, nature centers, and other non-profit and not-for-profit places of learning in the United States.

[Youth Garden Grant](#)

The Home Depot and National Gardening Association

[Charlotte Martin Foundation](#)

The Charlotte Martin Foundation is a private, independent foundation dedicated to enriching the lives of youth and preserving and protecting wildlife and habitat.

[Project Learning Tree](#)

Project Learning Tree offers Green Works! grants up to \$1,000 to schools and youth organizations for environmental service-learning projects that link classroom learning to the real world. Students implement an action project they help design to green their school or to improve an aspect of their neighborhood's environment.

[Youth Garden](#)

The 2018 Youth Garden Grant is an award designed to support school and youth educational garden projects that enhance the quality of life for students and their communities. Any nonprofit organization, public or private school, or youth program in the United States planning a new garden program or expanding an established one that serves at least 15 youth between the ages of 3 and 18 is eligible to apply.

[Association for Butterflies \(AFB\)](#)

Association for Butterflies (AFB) was established to support butterfly farmers and hobbyists through education, mentoring, and research. We are dedicated to educating both farmers and the public in the area of conservation by promoting butterfly habitats and gardening, and to provide resources that ensure quality raising practices for healthy butterflies.

Tuesday, February 21, 2017

Feed a Bee launches RFP for \$500,000 pollinator forage initiative

Newly established steering committee convened by Bayer Feed a Bee program aims to support projects and organizations in all 50 states by the end of 2018



Feed a Bee

Research Triangle Park, N.C. (Feb. 21, 2017) – Bayer, in coordination with the new Feed a Bee steering committee, today announced a call for proposals to establish additional forage for pollinators in all 50 states by 2018. [Bayer's Feed a Bee program](#), currently in its third year, has rallied more than 900,000 individuals and 117 partner organizations to plant more than 2 billion wildflowers across the U.S., creating and expanding forage areas for pollinators. Through this new initiative, Feed a Bee will build on the success of the program to fund forage initiatives and plantings for pollinators in every state in the U.S., working with organizations across the nation.

To further the reach of Feed a Bee and contribute to additional forage development, the Feed a Bee Steering Committee, comprised of more than a dozen Feed a Bee partners, including R.D. Offutt Company, Sweet Virginia Foundation, Project Apis m., amongst others, as well as representatives from the Bayer Bee Care Program, will distribute \$500,000 in funding over the next two years.

"We convened the steering committee to address an extreme need, now more than ever, to invest in forage and planting initiatives across the country," said Dr. Becky Langer, project manager, North American Bee Health, Crop Science, a division of Bayer. "Today's announcement represents a collaborative effort of some of the leading bee health stakeholders who are making it our mission to support the expansion of these programs and make sure organizations in every state in the U.S. have the opportunity to bring their pollinator initiatives to life."



2017 Feed a Bee Grant Recipients

In our state –

Girl Scout Troop 1052, Blue Springs
Hickory Hollow Farmstead
Lakewood Hills Homeowners Association
Master Naturalist, Carthage
Missouri Prairie Foundation

In our neighboring states –

IVM Partners, AR
Blackburn College, IL
Joliet Junior College, IL
North Central College, IL
St. Benedict Catholic Church, OK
IVM Partners, TN
The Land Trust for TN

Pulaski Conservation District, Little Rock, AR
Lake Katherine Nature Center and Botanical Garden, IL
Mercer County YMCA, IL
Mt. Carmel High School FFA, St. Francesville, IL
National Wild Turkey Fed. – Double Eagle Chapt., Sadieville, KY
Sustainable Comm. Network/Ballew Family Farms, LLC, KY
Tennessee Wildlife Resources Agency, Crossville, TN

Lakewood Hills Homeowners Association – Feed A Bee Project

By Judy Meixner

Missourians for Monarchs – Naturalists and Gardeners

In the spring of 2016 I joined Missourians for Monarchs – Naturalists & Gardeners (MFM-N&G), after completing the Master Gardener program training. My background in biology is pretty strong, but knowing how to create areas for native pollinators was not my strong suit. I knew I had a lot to learn and I knew there is no better teacher than hands on experience. In the fall of 2016 with the help of a few of my neighbors and primarily my husband, we embarked on a series of sample pollinator gardens on the dam areas of our subdivision lakes (Crystal Lake and Gem Lake). Armed with a variety of plants provided by Bob Lee, MFM-N&G Project Leader, we planted five small areas on Crystal Lake in the fall of 2016. In the spring of 2017 we learned a lot about what happens when you disturb the soil (weeds) and why not to use an erosion blanket (killed an innocent snake and more weeds). When we started weeding around the new plants in the spring of 2017 we learned how to identify the good from the bad (NOT an easy thing to do). About 50% of the planted area produced a fabulous display of flowers all summer, but there was still more to do and lots more to learn!

In the spring of 2017 I applied for and received a grant from the Bayer "Feed A Bee" program for my neighborhood, Lakewood Hills. With these funds we embarked on experimentation with site preparation. At Crystal Lake we cleared all the vegetation on two new areas each about 30 foot by 50 foot. On one area we spread a large tarp to "smother" the existing vegetation and at the opposite end we spread a semi clear sheet of plastic to "solarize", both methods of killing the existing plants and the seed bank down at least a few inches. At Gem Lake we were able to come in after a reconstruction project and spread annual grass on an area about 150 foot by 60 foot. With the funds from the Feed A Bee grant we will be seeding all three areas this winter with seed mixes from local sources and hoping for germination in the spring.

We are keeping our fingers crossed for a cold wet winter and we will keep you posted on our progress!



TWRA Regional Office Receives Pollinator Garden Grant Tuesday, November 14, 2017

The TWRA Region 3 office received a grant from the national Bayer Feed a Bee program to install a pollinator garden at its Crossville office. This national program has allotted \$500,000 in grants to establish foraging plots for pollinators in all 50 states by the end of 2018. The Feed a Bee program has funded a total of 71 projects through the initiative to increase forage for bees and other pollinators across the country since its inception.

As one of the 13 recipients of grants awarded during the second selection cycle of this two-year initiative, TWRA has received \$5,000 to fund its planting project.



New Publications—Great Gift Ideas!

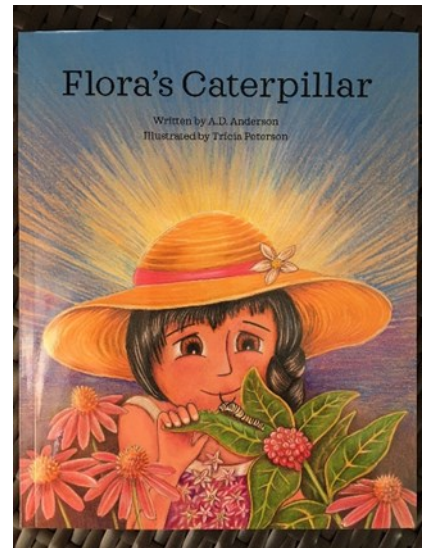
Flora's Caterpillar

Written by A. D. Anderson
Available from www.blurb.com

When my two children were young we would take walks around the neighborhood looking for caterpillars that we could bring home and raise to moths or butterflies. In addition to the challenge of finding these well camouflaged creatures was the difficulty of identifying them and determining their food source(s). In those days, before the internet, our go to reference was a little field guide, Peterson's First Guides, Caterpillars.

In Ms. Anderson's beautifully illustrated book, Flora loves butterflies and finds a caterpillar that she wants to keep and raise. A quick search on the internet provides her and her mother with the identification and food necessary, but doesn't tell her the whole story. This story unfolds as Flora discovers the wonders of metamorphosis.

Flora's final reward of releasing the full grown monarch butterfly not only makes Flora smile, but the reader as well. I highly recommend this book for any young naturalists in your family. There is no better teacher than learning firsthand the wonders of nature.



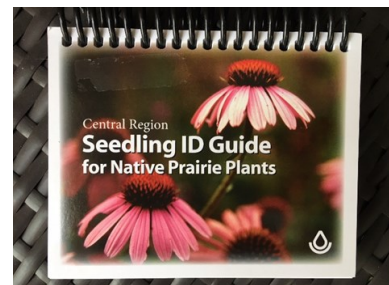
Central Region

Seedling ID Guide for Native Prairie Plants

Produced by Natural Resources Conservation Service (NRCS),
Missouri Department of Conservation (MDC) and Grow Native

This is a must have tool for anyone working with native perennial gar-

dens, large or small. The entire guide is available online through the USDA and the printed copy is available through the Missouri Department of Conservation for only \$6.00, worth every penny! The 4 x 5 inch, spiral bound, laminated card stock guide features 40 common native plants, grasses and wildflowers. Each facing set of pages contains wonderful information – Distinguishing Characteristics, Description and Comments. The best part is the beautiful photos – leaves, flowers, juvenile plant and most importantly what the very young seedling looks like. And to close out the guide, photos of the seeds and a listing of the number of seeds for each plant, by the pound, pretty eye opening! The only drawback, there is only one milkweed species highlighted in the guide, Butterfly Milkweed.



Reviews by Judy Meixner, Missourians for Monarchs—N&G

Interested in a great Garden Book for winter reading?

Check these out!

1. Bringing Nature Home by Douglas Tallamy
2. RHS Great British Village Show by Matthew Biggs and Thane Prince
3. Small Gardens by John Brookes
4. Vegetable Growing Month by Month by John Harrison
5. The Ultimate Guide to Roses by Roger Philips and Martyn Rix
6. Our Plot by Cleve West
7. Planting: A New Perspective by Piet Oudolf and Noel Kingsbury
8. Hillier Manual of Trees and Shrubs by John G Hillier and Roy Lancaster
9. Build a Better Vegetable Garden by Joyce Russell and Ben Russell
10. New Wild Garden: Natural—Style Planting and Practicalities by Ian Hodgson
11. The Well-Tempered Garden by Christopher Lloyd

Listed by: Indy Best

Other Books of Interest:

1. Pollinator Friendly Gardening by Rhonda Fleming Hays
2. The Monarch: Our Most Loved Butterfly by Kylee Baumle
3. Planting in a Post-Wild World by Thomas Rainer and Claudia West
4. A Sand County Almanac by Aldo Leopold
5. The Reason For Flowers by Stephen Buchmann
6. Gardening For Butterflies by The Xerces Society published by Press Timber
7. Protect the pollinators by Rachael Rose Zeller

List by Karen Leslie

Monarch Highway



Last year, the I-35 corridor was identified as a route on which land along the interstate could be developed to increase plants and provide refuge and food for monarch butterflies and other critically important pollinating insects.

"State roadways provide acres of habitat ideal for pollinators, but that's only a small portion needed for pollinator recovery," Zelle said. "It's important to build awareness and education about pollinator needs along the I-35 corridor to ensure monarch butterflies and other pollinators can flourish."

Monarch butterflies born in late summer or early fall migrate south to winter in Mexico. In the spring, the butterflies return to the southern United States and lay eggs. Successive generations of monarchs continue moving north, which takes them along the I-35 corridor and finally into the northern United States and Canada. These monarchs begin the cycle over again by completing the 1,500-mile trek back to Mexico.

Minnesota is among six state transportation departments and the Federal Highway Administration that signed a memorandum of understanding in 2016 designed to improve pollinator habitat along Interstate 35, a key migratory corridor for monarch butterflies. Signatories include the Federal Highway Administration and senior executives from Iowa, Kansas, Minnesota, Missouri, Oklahoma, and Texas to informally designate the 1,500-mile I-35 corridor as the "Monarch Highway." This partnership demonstrates a broad commitment from state agencies, the federal government and nonprofits, including the National Wildlife Federation, toward preserving the monarch butterfly and other pollinators.

New Monarch Highway Logo



As part of the ongoing effort to raise awareness of pollinator habitat and preservation, the Monarch Highway was proud to launch its new logo during National Pollinator Week, June 18-25, 2017.

The new logo represents the interaction of the monarch and the interstate highway system. The blue backdrop signifies the miles butterflies travel to reproduce in northern climates, while the yellow demonstrates the insect's migration along the Monarch Highway corridor. The white dotted-lines represent lane markers guiding the monarch home.