

A Butterfly Effect?

Habitat Decline Is Hurting Monarch Butterflies

BY RITA BRHEL
P&D Correspondent

The monarch butterfly is in danger of extinction. Through a combination of breeding and overwintering habitat loss and pesticide use, the monarch population is at dismal levels. Once a common sight in the Yankton area, a glimpse of one of these natural wonders should now be counted as a special event.

Monarch numbers have fallen by 90 percent during the last two decades, according to Scott Hoffman Black, executive director of The Xerxes Society for Invertebrate Conservation in Portland, Ore.

Beyond its role as a native pollinator, Wendy Caldwell, coordinator of the Monarch Joint Venture in St. Paul, Minn., cites the monarch's social and cultural value as to why many people find it so important to conserve the monarch butterfly. A 2012 survey by the University of Minnesota suggests that Americans are willing to support up to \$6.5 million in monarch conservation.

"Ethically, preserving monarchs is the right thing to do," added Caldwell's colleague, Karen Oberhauser, a wildlife conservation professor and Extension specialist at the University of Minnesota in St. Paul.

While the potential loss of the monarch butterfly may be considered by some people as nothing more than the extinction of an iconic insect, as with many things in nature, there is bound to be adverse effects reaching way beyond that of simply plucking out a species from the animal kingdom. Even if the Butterfly Effect — that the single beat of a butterfly's wings can affect winds halfway across the world — is only a myth, no one knows the exact consequences of removing this native pollinator from the North American ecosystem.

"Monarchs have a great deal to teach us about how the natural world works, and I would argue that understand the natural world will benefit us," Oberhauser said.

Monarch butterflies are unique in that they migrate from their summer breeding grounds in the U.S. Midwest to overwintering locations, the majority traveling to Central Mexico with some set-



PHOTO: RITA BRHEL

The decline in milkweed has had an impact on monarch butterfly populations.

tlung on the coast of Southern California or Florida. East of the Rocky Mountains, monarchs travel up to 3,000 miles. Also, every year, there are numerous generations of monarch butterflies but only the last — the migratory generation — migrates south. The summer generations only live for 2 to 6 weeks and do not migrate. The migratory generation lives up to 9 months, giving enough time to travel to the overwintering grounds. Once the weather warms, this overwintering generation journeys north and lays eggs from which the summer generations hatch.

The summer generations' native region is the U.S. Corn Belt. Monarch butterflies encounter many challenges to their populations here. Milkweed is essential food for the caterpillars and used to be abundant, until the development of glyphosate, which ef-

fectively eliminates weeds in agricultural crops and field borders. In addition, there are fewer acres of pastures and native meadows, which provided a safe harbor for milkweed. And roadside ditches are often sprayed for weeds or mowed, further impacting milkweed habitat.

Unlike the caterpillars, adult monarch butterflies are not limited to one plant species and feed on nectar from a variety of plants. However, exposure to Bt corn is as toxic to monarchs and other butterflies as it is for the European corn borer, a moth in adult form and of the same insect family.

Organizations like the Monarch Joint Venture largely focus on improving milkweed habitat by encouraging homeowners to incorporate plantings into their landscape. Rural landowners have more potential of impacting milk-

weed habitat because of the amount of land available: The more milkweed available, the more monarchs supported.

And Caldwell notes, milkweed is not a monarch-only habitat. Many native pollinators and other beneficial insects rely on this hardy plant to complete their life cycle.

"In real estate, it's location, location, location. And for monarchs and other wildlife, its habitat, habitat, habitat," added Chip Taylor, director of Monarch Watch in Lawrence, Kan. "We have a lot of habitat in this country, but we are losing it at a rapid pace. We need to think on a bigger scale, and we need to think ahead, to anticipate how things are going to change as a result of population growth, development, changes in agriculture and, most of all, changes in the climate."

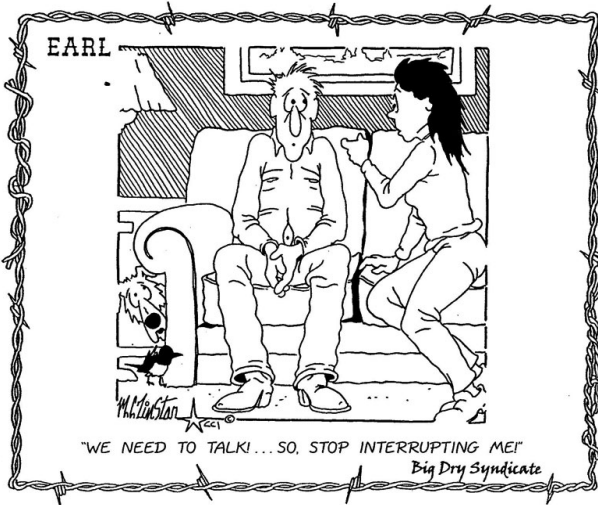
Taylor proposes that conservation efforts focus more on promoting the use of marginal areas, much like Pheasants Forever's campaign to preserve field borders and fence lines for nesting habitat. Monarch Joint Venture has a campaign encouraging utility companies to plant milkweed around power poles and right-of-ways.

"We need a new conservation ethic, one dealing with edges and marginal areas that addresses the changes of the recent past and anticipates those of the future," Taylor said.

He's not the only monarch conservationist thinking big. The Xerxes Society for Invertebrate Conservation delivered a letter to the White House in April requesting help in restoring monarch habitat nationwide.

While it's understandable why farmers don't want milkweed amongst their cash crops, said Lesley Deem, entomologist and director of the Pollinatorium in Urbana-Champaign, Ill., public support is leaning toward a balance of agricultural and environmental interests and producers should be aware that changes to how they grow crops may be coming.

"To avoid further monarch declines, we need to support farmers and public land managers to plant milkweeds and other native wildflowers on 10 to 20 million acres over the coming years," said Gary Nabhan, founder of Make Way for Monarchs in Brevard, N.C.



Climate Prediction Center: Cool, Wet Weather Ahead

BROOKINGS — More cool and wet weather across South Dakota are likely this summer according to the latest outlook from the Climate Prediction Center of NOAA.

"This condition will have some interesting implications for South Dakota and the region particularly because of the cool spring," said Dennis Today, SDSU Extension State Climatologist. Although corn planting has moved along near average pace to this point in the spring for South Dakota, Today said emergence is behind the 5-year average. "While this is not a major issue currently, the potential lack of heat during the summer could change the potential crop situation across the state as the summer progresses," he said.

Typically, crops in the southeast part of the state often experience enough heat during an average growing season. Today indicated that more frequent 90-degree days often leads to crop stress. "The potential for cool weather during this summer would likely be favorable to their growing season reducing some potential stress," Today said.

He added that the cooler conditions in the northern portion of the state could produce some additional problems with corn and soybeans. "Northeastern parts of the state generally are more heat-limited."

Cooler conditions during the summer could slow crop development throughout the year," he said. "The final impact of cooler temps is not likely to be limited yields, but will be either crops which will not be completely mature at harvest, or contain too high moisture."

Similar problems are likely across the northern tier of the Corn Belt where Michigan, Minnesota, Wisconsin and North Dakota are all well behind on corn planting currently, said Laura Edwards, SDSU Extension Climate Field Specialist.

"These states are not the biggest producers of corn and soybeans. But collectively, they represent a large chunk of acres which could have delayed crop problems throughout the year," she said.

For small grains, Edwards explained that the cooler conditions should have less of an impact other than potentially delaying maturity and harvest. "Cooler conditions should be generally favorable for small grains once planted," she said.

She added that because wetter than average conditions are more likely throughout most of the state, for areas south and west this also should be generally beneficial. "Even if wetter than average conditions do not pan out, the cooler temperatures would help overall soil moisture conditions," Edwards said. "Cooler conditions reduce crop water use. Thus, less moisture would be needed even in drier soils."

The long range outlooks are also interesting, Today added, because the Climate Prediction Center rarely says much about temperature or precipitation in the northern plains during the summer months. "The current outlooks are not indicating wet or cool conditions strongly."

But that they indicate anything different from equal chances is an interesting feature of the outlooks," he said.

WHY COOLER AND WET CONDITIONS?

Part of the reasoning behind the change, Today explained, seems to be the development of the current El Nino. "Warmer than average sea-surface temperatures have developed rapidly in the equatorial Pacific leading to a quickly developing El Nino," he said.

Recent numbers from the Climate Prediction Center have noted a 65 percent chance of El Nino developing this summer. This situation has impacted the potential outlooks over South Dakota and the Corn Belt for the summer.

Commentary

Can Industrial Hemp Be A Viable Crop?

BY RITA BRHEL
P&D Correspondent

My husband recently tilled our garden plot, informing me that we had a nice crop of wild hemp growing in the corner. Though it's now dead and chopped up along with all the other weeds that were taking advantage of the poultry manure we use as fertilizer for our vegetable garden, we joked that we ought to find a place to sell that hemp, for how well it grows around here.

I guess others have been thinking the same thing. Signed into Nebraska law this spring was LB 1001 allowing the production and marketing of industrial hemp. Trouble is, according to many alternative-minded farmers in the state, there is little actual market demand for hemp.

Growing hemp for fiber and growing hemp for the other use — illegal here, mind you, though not for other states like our western neighbor, Colorado — are two very different things, but not everyone knows that fiber hemp doesn't give the same high when smoked as actual marijuana. Many hemp farmers in other states have reported that the cost of securing their crop alone makes it difficult to break even on a fiber hemp crop, even if they are able to find a lucrative market.

With this in mind, I went on a hunt for market profile for industrial hemp. According to the Agricultural Marketing Resource Center, housed at Iowa State University in Ames, the major hurdle for the industrial hemp market are the DEA regulations under the Controlled Substances Act. That makes sense. It turns out that industrial hemp used to be a quite successful crop in the United States and, globally, hemp is one of the oldest textile fibers. In the U.S., industrial hemp's heyday was in the mid-19th Century when it was used for sails, riggings, canvas, ropes, clothing and paper. However,

with the passage of the Marijuana Tax Act in 1938, U.S. hemp production essentially ended except for a brief revival during World War II. In the 1950s, legislation was passed that made it illegal to grow any cannabis plant varieties, whether marijuana or industrial hemp.

Industrial hemp and marijuana are very different varieties, the former being of absolutely no value to marijuana users. Keep that in mind as I mention that industrial hemp is not only used for fiber products but also food purposes. Apparently, hemp seed and hemp oil are being used in all sorts of food items from pasta to tortilla chips to salad dressings to frozen desserts and more. Hemp "milk" provides significant amounts of omega 3 fatty acids and protein. And hemp oil is also used in nutraceuticals, particularly for inflammation and depres-

sion, and health and body care products.

Fiber-wise, industrial hemp is still used in clothing and textiles but has also been discovered to be an efficient insulation both for buildings as well as vehicle interiors. There are other growing uses, such as wild bird seed mixes for hemp seed and animal bedding for the inner part of the stalk.

And the annual sales of industrial hemp are nothing to bat an eye to: \$40.5 million in 2010 in the United States. The main exporter of hemp products to the United States is Canada, and Canada leads the world in hemp production, too, followed by Germany, England and France.

Industrial hemp is reported to be low maintenance. Plants grow six to 15 feet tall, and the growing season ranges from 70 to 140 days. One acre of hemp yields an average of 700

pounds of seed, which can be pressed into 50 gallons of oil. Then, the stalks can be harvested, averaging 5,300 pounds of stalk per acre, which can then be converted to 1,300 pounds of fiber. And it's purported to be an excellent cover crop for traditional grain crops.

I'm not saying I'm going to start an industrial hemp farm — after all, we tilled under what hemp we had into our garden plot — but it's certainly something for farmers to consider looking into themselves, especially if the market infrastructure gets stronger here in the Midwest. Efficiency in harvesting and processing appear to be the big challenges in getting a viable hemp market going.

SDSU Extension Wheat Walks Slated

BROOKINGS — SDSU Extension will host Wheat Walks in the Corsica and Harrold areas May 28. The goal of these events is to provide wheat producers with the latest information to effectively manage their crop.

SDSU Extension Agronomy Field and State Specialists will be on hand at each location, providing expertise in plant pathology, weed control, entomology, soil fertility and agronomic information. Each specialist will give a brief presentation, followed by time for discussion and questions for the specialists, one-on-one or in small groups. Those attending are welcome to bring samples from their fields for the agronomists to assess. Representatives from the South Dakota Wheat Commission and South Dakota Wheat Inc. will also be present. CCA credits have been applied for.

Area agribusinesses have agreed to help sponsor the Wheat Walks and there will be no charge to attend. Those attending will receive several Extension publications. Refreshments will be provided.

The Corsica walk is set for May 28 at 9:30 a.m. three miles south of Corsica at the intersection of highways 281 and 44.

Clinic closed. Memorial Day May 26th



The Yankton Medical Clinic®, P.C. and ConvenientCare will both be closed on Memorial Day, Monday, May 26th so that our staff may enjoy the holiday with their families. Regular hours will resume on Tuesday, May 27th.

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