SONOMA-MARIN Resources

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The Near Demise of the Monarch Butterfly and What We Can Do to Save It

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The monarch is America's best-known butterfly and their seasonal migration from their spring and summer breeding grounds to overwintering sites is regarded as one of the world's great natural wonders. However, the monarch butterfly is now on the verge of extinction. A friend of mine recently said that he simply doesn't see many butterflies around anymore and it used to be that he couldn't avoid collecting large numbers of them on his truck windshield as he traveled around West Marin. Now they are rare.

In the fall and winter, western monarch butterflies migrate to overwintering sites near the Pacific coast where they remain for four to six months. When they reach their overwintering grounds, monarchs form clusters for warmth and protection from predators, often in forested coastal groves. In late winter, the female monarchs head inland to find milkweed, the only plant they will lay their eggs on and that the next generation of caterpillars will eat. There were more than 4 million western monarchs counted at overwintering sites along the California coast, including sites in Marin and Sonoma, in the early '80s; a count which declined steadily to 200,000 in 2017, then to 29,000 in 2019. Last year's coastal California count for the western monarch came in at a dismal 1,900. The radical decline in the national monarch population has recently been recognized by the U.S. Fish and Wildlife Service which found that "adding the monarch butterfly to the list of threatened and endangered species is warranted but precluded by work on higher-priority listing actions". With this decision, the monarch becomes a candidate for listing under the Endangered Species Act (ESA), and its status will be revisited.

The diminishing population of the monarch is bad enough in itself, but it forms part of a broader picture of global insect decline. Insects as a whole are declining by 1 to 2% each year, according to a report by the University of Connecticut and based on input from a dozen studies from around the world. A study by the Global Biodiversity Information Facility reports that the number of wild bee species has dropped by over 25% in the last thirty years. The declines are mostly attributed to the use of herbicides, insecticides, and pesticides (including neonicotinoids, which are declining in use), habitat loss, and climate change.

Many of us regard insects as pesky "bugs" and as such the attention we give them is often negative. Fortunately, this perspective is changing or at least becoming more informed. Bees, butterflies, and other pollinators are hugely important to our food chain. Over 30% of our crops are pollinator-dependent and 75% of those that are not pollinator-dependent produce higher yields when pollinated. Honey bees, bumblebees, and butterflies are the top three types of pollinators that support the production of a wide variety of our crops, including berries, fruits, and vegetables. Pollinators also have a positive effect on the beef, livestock, and dairy industries because they help pollinate forage and hay crops. In other words, pollinators have a huge economic benefit to farm productivity, the food supply, food prices, and our own sustainability.

What's being done now?

There are people and organizations who are actively trying to make a difference.

Recognizing the importance of the western monarch, Marin Resource Conservation District (RCD) joined the Marin Monarch Working Group and many other RCD's as part of a statewide effort to reverse the decline in the monarch population and improve the numbers and diversity of all pollinators. The Marin Monarch Working Group, founded by Ed Nute and Mia Monroe, consists of numerous organizations including Turtle Island Restoration Network, a nonprofit in Lagunitas, which propagates native milkweed and plants pollinator-friendly school gardens. Marin Master Gardeners, a part of UC Agricultural Extension, is also in the group and works to plant school gardens and educate students about pollinators.

Marin, Sonoma, and Gold Ridge RCDs have all been working on efforts to support monarchs and pollinators. Sonoma and Gold Ridge RCDs have co-authored a Milkweed Planting Guide for monarchs, plan on hosting an educational webinar for Sonoma Coast residents to promote monarch conservation, and are coordinating a springtime monarch plant sale in Sonoma County. In addition, Gold Ridge RCD is partnering with the Creekside Center for Earth Observation and local public land managers to provide recommendations for three monarch overwintering sites in Sonoma County, as part of their Sonoma Coast Monarch Overwintering Site Protection and Enhancement Project. Marin RCD intends to increase its pollinator efforts, with a specific focus on monarchs, by including more native milkweed and nectar plants in project designs where appropriate (milkweed is known to be toxic to livestock), and by applying for a Xerces Society Monarch planting kit. Additionally, at the local level, STRAW, a division of Point Blue Conservation Science is, and has been, planting milkweed in appropriate locations in wetland and riparian projects, and includes other pollinator-beneficial nectar plants in their projects, incorporating a diversity of bloom periods and flower types. OneTam is applying for a grant to harvest more local milkweed seed.

At the state and federal level, the California Association of Resource Conservation Districts (CARCD) is soon to offer a small grant for RCDs to provide technical assistance to support pollinator-beneficial projects. NRCS has federal funding available for producers, through EQIP and other programs, for a variety of cost-share practices that create or enhance pollinator habitat, including planting or seeding native milkweed. Furthermore, the Monarch Joint Venture, a national initiative, has just announced the launch of a Western Monarch Recovery Fund and prepared a social media kit to facilitate sharing critical information to help monarchs nationwide.

Key strategies to save the Western Monarchs in Marin are as follows:

1. If you live in inland areas in Marin (at least five miles from the coast and Tomales Bay): Plant native nectar plants and the native narrowleaf milkweed (Asclepias fascicularis) or showy milkweed (Asclepias speciosa). Be aware: milkweed is known to be toxic to livestock. Ideal locations to plant milkweed are around Novato and South through Central Marin. For information on planting milkweed in Sonoma, please reach out to Sonoma or Gold Ridge RCD. It's a good idea to plant a minimum of six Milkweed plants and to be prepared for monarch caterpillars to eat them. I am told these plants are available in limited supply at Turtle Island Restoration Network. You can also ask your local native plant nursery to source them for you. Do not plant tropical or other non-native milkweeds.
2. If you live within 5 miles of the coast: Plant native nectar-producing flowering plants, particularly those that bloom in late fall, winter, and early spring; do not add milkweed, and if your garden already contains milkweed, cut it to the ground in October. Stock ponds are a favorite source of water for the monarchs and rich mud from the ponds also provides nutrients for the butterflies. For a list of nectar plants that attract and feed pollinators take a look at the Xerces website (xerces.org) or read an excellent report by EAC called Marin's Monarch Movement which includes a suitable list of plants for different parts of Marin County.
3. Select your nectar plants so that you have blooms at different times of year and choose a variety of flower shapes to attract both bees and butterflies.
4. Protect the overwintering habitat in forested groves in a few locations along the coast.

What not to do?

1. Do not plant milkweed in the coastal zone (within 5 miles of the coast).
2. Do not plant tropical or other non-native milkweeds. Non-native milkweeds disturb the monarch's breeding cycle and dramatically reduce the butterflies' chances of survival.
3. Try to go organic, kick the herbicide insecticide habit if you can, and if you can't please be careful where you spray the stuff. Avoid buying any plants or seeds which have been treated with insecticides, or more specifically, neonicotinoids.
4. Ask your local Mayor to sign the Mayors' Monarch Pledge.

The good news is that with the combined energy of volunteers, land managers, and agricultural and conservation organizations, we have a chance to save this American wonder; but to succeed we need widespread urgent participation and we must be sure we are all doing the right actions in the right places!

AGRICULTURAL Commissioner

Sonoma County Department of Agriculture/Weights & Measures

Seasonal Reminders and Updates from AWM

As crop protection efforts ramp up, we would like to offer a few reminders to help protect your employees and stay in compliance with regulations. Following are a few reminders:

- Employees and field workers who handle pesticides must be trained annually and must be trained on all specific pesticides they will be handling. All trainings must be documented.
- As you begin your spray programs for the new season, please remember to adjust your application equipment to match the current conditions in your vineyards and orchards.
- If an employee is handling pesticides and the label requires protective eyewear, there must be one pint of emergency eyewash immediately available. Meaning the water must be on the tractor, or on the applicator if using a backpack sprayer.

This is also the time of year that the Department ramps up our pest detection and trapping programs. Beginning in March, we will once again deploy detection traps for European Grapevine Moth (EGVM). Trap counts and trapping densities have been reduced, but commercial vineyards will continue to be monitored. Also beginning in March, our local nurseries and landscaper holding yards will be trapped for Glassy-Winged Sharpshooter (GWSS). In April, our general pest detection traps will be deployed in urban areas, followed up by GWSS urban traps deployed at the beginning of May. As is the case with all of our insect detection programs, early detection of pests is critical for subsequent management and eradication efforts.

California Refund Value (CRV)

If you purchase beverages, you likely noticed a fee charged called the California Refund Value (CRV). A 5₵ CRV fee is charged for most glass bottles, plastic bottles, and aluminum cans that hold less than 24 ounces. 10₵ CRV fee for containers holding more than 24 ounces. The CRV fee was to encourage the return of recyclable material back to recycling centers to collect the redemption fee.

Unfortunately, in 2016, California's largest operator of recycling redemption centers, rePlanet, shut down all its operations in the state. Today, Sonoma County has only four locations that purchase CRV material from the public:

- Global Materials Recovery Services, 3899 Santa Rosa Avenue, Santa Rosa
- Brambila Recycling, 370 Sebastopol Road, Santa Rosa
- West Coast Metals, 470 Caletti Avenue, Windsor
- Petaluma Recycling Center, 315 2nd Street, Petaluma

Here are a couple of tips when redeeming your CRV materials at any of these locations:

- Have a general idea of the weight value of the materials you are selling. Make sure the weighing process, especially the scale readout, is visible so you can verify the total weight value.
- Ask for a receipt of the transaction that shows the weight of the materials sold to the recycler.

If you feel that the process was not transparent or that you were paid less than the correct amount for your CRV materials, please call the Department at (707) 565-2371 and ask to speak with a Weights & Measures Inspector.