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Wild Ones®

NATIVE PLANTS, NATURAL LANDSCAPES

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Celebrating natives
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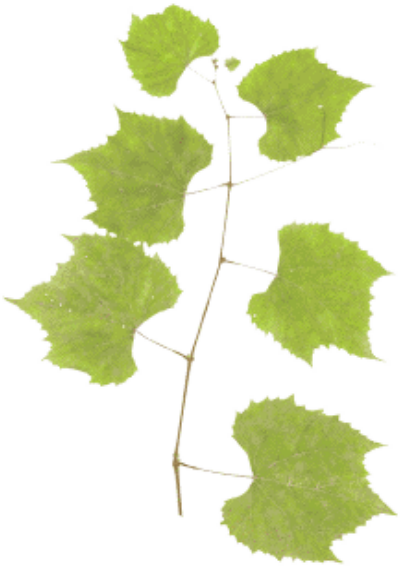
Grapevine

By Maryann Whitman



Monarch Butterflies in Danger
In early February, 2011, the U.S. Department of Agriculture gave unrestricted approval for genetically modified alfalfa. Monarch butterfly specialist, Dr. Lincoln Brower says, "My understanding is that alfalfa has been genetically altered to resist the powerful herbicide, glyphosate. Thus the seeds can be planted, and when the seedlings are established, the fields are sprayed and the herbicide
kills all plants except the GMO (genetically modified organism) alfalfa. So-called Roundup-ready soybeans and corn are extensively planted, and the spraying of these two major crops with herbicides has eliminated milkweed from thousands of acres of land. This will now extend to the acreage planted in alfalfa – more milkweed will be exterminated. A question that needs to be addressed is whether the nectar of alfalfa will in any way be affected that could be toxic or detrimental to pollinating insects. Alfalfa flowers are an important nectar source for monarchs. So we shall witness yet another agro-industrial insult to biodiversity on our planet."

Not only is alfalfa important to monarch butterflies, but milkweed is essential to monarchs. The understory of all "weeds," not just milkweed, is wiped out in fields of Roundup-ready, genetically modified crops. Many of these weeds are in fact native plants and wildflowers, and represent food and habitat to the entire spectrum of wildlife.

Humble Bumblebees Under Attack
A study done at the University of Illinois (U of I) found that wild bumblebees have suffered major losses in several species, and declines in their range since record-keeping began in the late 1800s. The study found that in the last 20 years, the relative abundance of four of the analyzed eight species has declined by as much as 96 percent – and their surveyed geographic ranges have shrunk by 23 percent to 87 percent. Further, bees with declining populations show lower genetic diversity than species with healthy numbers, and are more likely to be infected with Nosema bombi. This parasite, (which has been likened to HIV in bees) was imported from Europe during the1990s as part of efforts to increase populations of certain bumblebees in greenhouses. (You can read more about this in the March/April, 2007, issue of the Wild Ones Journal, wildones.org/download/bumblebee.pdf). The study hastened to add that Nosema is likely not the entire cause.

"Climate change appears to play a role in the declines in some bumblebee species in Europe," said U of I entomologist Sydney Cameron, the first author on the research paper. "Habitat loss may contribute to the loss of some specialist species, low genetic diversity, and high infection rates of the parasite must be considered suspects in the declines.

"Whether it's one of these or all of the above, we need to be aware of these declines," Cameron said. "It may be that the role that these four species play in pollinating plants could be taken up by other species of bumblebees. (We have 50 species of bumblebees in North America.) But if additional species begin to fall out due to things we're not aware of, we could be in trouble."

Honeybee Die-offs

Cousins of bumblebees, the honeybees, have also experienced catastrophic die-offs since 2006, in a phenomenon known as "colony collapse disorder." Bees go off to forage, and simply failto come home at the end of the day, leaving the queen and immature bees to tend the larvae.

Both European and U.S. studies have investigated possible involve ment of various pesticides. None seemed to be firmly implicated until clothianidin, and some sister insecticides, came into use. These insecticides are absorbed by plants, and then released in pollen and nectar to kill pests. Clothianidin has been so firmly impli cated in sudden honeybee death that a number of European countries have banned its use.

In 2003 clothianidin was given conditional registration by the Environmental Protection Agency (EPA) in the U.S. This was followed by unconditional registration in 2007, based on one study done by Bayer, the manufacturer of the insecticide. An internal memo from November, 2010, written by several internal EPA researchers, described scientific inadequacy in the Bayer study that had been used to justify clothianidin's approval. "Clothianidin's major risk concern is to non-target insects (that is, honeybees)," wrote those researchers. "Exposure through contaminated pollen and nectar and potential toxic effects therefore remain an uncertainty for pollinators." (Search www.panna.org for documentation).

An EPA spokesman announced that clo thianidin will not be reviewed until 2012, and will be available for use this spring of 2011.

What, Me Worry?

If you're not an entomologist, should you be concerned about all this? Keep in mind that butterflies, bumblebees, and honeybees are major pollinators. Without pollination, many of our important food crops may fail, leaving the world at risk of food shortages and famine. If you like to eat, keep in mind that every third bite you take comes to you courtesy of a pollinator.

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