

Of Bees and Butterflies and Other Sad Tales

Our native and even non-native bee and butterfly populations are seriously threatened from several sources, mostly, but not totally, man-made. Here are their stories.

First, some facts about bees. When the word “bee” is used, most people think of the kind that live in large colonies or hives, mostly provided by man. The bees that occupy these hives are not native bees, but species imported from Europe by early settlers. The settlers brought the bees to provide them with honey, but what they didn’t know is that they were lucky to have done so, because many of the fruits and vegetables they also brought with them needed the additional bees to pollinate these European plants.

In the 1950s, African bees imported into South America began to mate with European honey bees, thus producing the “Africanized honey bee”.

But of the 700 species of bees known in Texas, nearly all are native and include several types of bees, including bumble bees, carpenter bees, leaf-cutter bees, mason bees, mining bees and sweat bees. With the exception of bumble bees, virtually all of the other bee species are solitary bees rather than the colony-forming honey bees. Bumble bees form much smaller colonies than honey bees.

You have probably heard of the problems with the European honey bees suffering from a disease or syndrome called “colony collapse disorder” in which whole hives of bees simply disappear. A lot of work has been and is being done to try to understand the problem and find a solution. Possible causes include parasites, disease, pesticides and stress from hive movement, or possibly a combination of factors (commercial operators move large numbers of hives from one area to another to pollinate specific crops at specific times).

Increasing use of pesticides as well as native areas being cleared for farming have also greatly affected the native bee populations.

I wrote earlier about the amazing Monarch butterfly and its migration from the mountains in Mexico through Texas and the Midwest to the Northeast and back each year. But no single butterfly completes this migration. Along the way different generations of Monarchs lay eggs, and die and the new generation continues the migration. In the fall, a single generation migrates from the Midwest and Northeast, through Texas, to Mexico and then in the spring back to Texas to lay eggs. Then successive generations continue the migration.

In Mexico in the winter, all of these migrating Monarchs cling close together in huge masses on pine and fir trees in a single area. Over the years the area covered by

Monarchs has been recorded. In 1995, they covered 44.5 acres. Last year they were down to about 3 acres, and this winter down to only 1.65 acres!

The causes for this precipitous decline are believed to be several. First, there was illegal logging in the Mexico mountains where the butterflies wintered, but that problem appears to have been largely stopped. Then there is the increase in the amount of non-farmland converted into farmland and thus the loss of native habitat.

But it is believed that the main cause of the decline in the Monarch numbers is the greatly increased use of genetically modified (GM) corn and soybeans. "Roundup Ready Corn", a genetically modified corn that is resistant to the herbicide "Roundup", has allowed farmers to greatly increase the use of the herbicide, which in turn has killed the native milkweed plants (at least 80% by some measurements) that monarchs need to lay their eggs and for the larva to eat.

In addition, some GM corn also has inserted into its genes the pesticide Bt, which becomes part of the pollen of the corn which blows off the fields onto native areas, coating milkweed plants. There is some concern that this is killing butterfly larva also.

So, the cause of colony collapse of hive-bees may or may not be man-made, we just don't know yet. But the increased use of insecticides of all kinds by farmers and homeowners alike is certainly affecting the number of these other important pollinator bees.

The drastic drop in monarch populations is almost certainly caused by humans. We don't yet know the full extent of the GM crop effects on other pollinators, because we don't have as good a measure of their numbers as we do for Monarchs.

If you are interested, there will be a talk on Native Bees at the Master Naturalist meeting, Monday at 7:00 pm at the UGRA building.

Until next time...

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