



Monarchs overwintering in Mexico (1 ha = 2.47 acres is about 50,000,000 butterflies), and a newborn female hanging onto an expired wildflower (from *Quest of a Broken-Wing Butterfly*).

Sentinel for the Insect World

1 March 2021

James Hansen

Monarch butterflies reaching their winter home in central Mexico this year were reduced by two-thirds from two years earlier (see chart above). Thus, our celebration of a monarch comeback – including a notable increase on our farm in the summer of 2018 – may have been premature. Still, the number of monarchs this year is three times greater than at the 2013-14 minimum.

The 2013-14 season was when I wrote [Quest of a Broken-Wing Butterfly](#) – I feared that I had introduced our grandchildren to this extraordinary insect just in time to witness its extinction. Monarchs don't travel in pairs, so chance meetings of male and female butterflies could become so infrequent that the species is committed to extinction. Fortunately, that was not the case. A female monarch lays so many eggs that the population can bounce back, if weather cooperates and if there is plenty of milkweed for the caterpillars to eat. Herbicides that reduce milkweed abundance may be the main cause of the monarch's decline, but increased drought and climate extremes in the wintering grounds are also a factor. See remarkable 3-minute monarch [video](#).

The monarch is my favorite sentinel for the insect world, but another one is [fireflies](#) (lightning bugs). There aren't as many fireflies now as there were when I was young. Humans are taking over or changing firefly habitats, and our light pollution also affects them negatively.

Many insects are on decline, which in general is not a good thing. There are lots of articles on the topic -- you can google it. I think we should try to set aside more land for nature.

You can sign up for my Communications [here](#) and our global temperature updates [here](#). I'm on Twitter @DrJamesEHansen, (<https://twitter.com/drjamesehansen>), but I'm focused on writing *Sophie's Planet*.