

The Boston Globe

Climate shifts Mass. butterfly species

Warmth drawing new types north

By **Jeremy C. Fox** | Globe Correspondent | August 20, 2012 | Page B4

Harvard scientists say they have found shifts in the Massachusetts butterfly populations tied to climate change, according to a new study published Sunday in the scholarly journal *Nature Climate Change*.

The study, which used data collected during 19 years by amateur enthusiasts from the Massachusetts Butterfly Club, found there were fewer butterflies in Massachusetts with a habitat range centered north of Boston and more butterflies whose range is based farther south.

“On one level, it’s exactly what you expect,” said Elizabeth Crone, coauthor of the study and a senior ecologist at the Harvard Forest in Petersham, Mass. “It’s now strikingly easy to see pervasive effects of climate change.”

Changing butterfly populations could have deeper effects on the ecosystem. Because most butterflies are finicky eaters when they are larvae, the plants that local butterflies eat will change as different species predominate. No one species is likely to make a dramatic difference, Crone said, but the cumulative effect of dozens of species becoming more or less prominent could cause a noticeable impact.

The biggest surprise of the study, Crone said, was that the data showed declines that scientists and conservation biologists had not previously detected. For instance, Atlantis and Aphrodite fritillaries — small butterflies with brown-and-white-checked wings — have ranges centered north of Boston and had declined by nearly 90 percent, a decline not previously noted.

Crone said the species that are most heavily affected are those that spend winter as eggs or small larvae and do not have a chance to eat before cold sets in. While those species decline, she said, some species are increasingly common that were unknown in Massachusetts just a couple of decades ago.

“For a new species to arrive, you just have to have a couple get here and start reproducing,” Crone said.

Crone said that it is good news that butterflies are able to respond to changing temperatures by shifting to areas with the climates they need to survive. But not all species are so mobile, she said, and there is little that humans can do about declining numbers.

The best thing people can do to help butterfly populations, she said, is to plant native plants in their gardens and public parks and avoid using chemical pesticides.

“Butterflies need a path to follow where there are wildflowers they can get nectar from and places where they can lay their eggs,” she said.

From: <http://bostonglobe.com/metro/2012/08/19/harvard-study-shows-butterfly-populations-shifting-with-climate-change/Y8ZifqprqarnhqlviHMfM/story.html>