

Bee populations decline as they lose favorite pollinating plants

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Oregon State University bee researchers collect "nurse bees" from hives outside on August 5, 2014 in Corvallis, Oregon

Bee populations have declined in recent decades mainly due to a loss of biodiversity causing the disappearance of their favorite pollinating plants, according to a study published Monday.

Researchers analyzed the pollen found on the bodies of insects from 57



different wild bee species collected before 1950 and held in natural history museums in the Netherlands. They found that the insects had certain preferred <u>plants</u> for pollinating.

As their favored plants diminished, so too did domestic and wild <u>bee</u> <u>populations</u>, according to the study published in the *Proceedings of the National Academy of Sciences (PNAS)*.

"Decline of preferred host plants was a main factor associated with bee decline," said the study led by Jeroen Scheper, an environmental specialist at the Alterra Research Institute in the Netherlands.

The size of <u>bees</u> was also important, as larger bees required more pollen to survive.

"The other main factor associated with bee decline was bee body size, which was negatively related to population trend, likely because larger bees have a greater pollen requirement," Scheper said.

Other, less important factors included the variety of the insect's diet and sensitivity to climate change.

The researchers said bees' favorite plants should be replenished in order to restore numbers.

"Strategies to mitigate bee losses may need to target the specific <u>host</u> <u>plants</u> of declining <u>bee species</u>," Scheper said.

The loss of natural habitats, namely grasslands, increasingly used for intensive agricultural production has led to a decline in biodiversity and the loss of bees' food sources.

Another phenomenon threatening domestic bees is "colony collapse



disorder," which is linked to pesticides and pollution.

The phenomenon has been especially damaging in the United States and Europe, where bee populations have declined up to 90 percent in some areas.

The yellow and black buzzers are essential for crop production, pollinating up to 80 percent of plants and flowers essential to the human diet.

More than 70 percent of crops, including fruits, vegetables, oilseeds and pulses, spices, coffee and cocoa, rely heavily on bee pollination for reproduction.

In June, the White House ordered environmental regulators to review the effect that pesticides may be having on bees and other pollinators that have suffered significant losses in recent years.

President Barack Obama has also called for a sweeping strategy across government agencies this year that would protect pollinators by improving their habitat.

Measures include planting flowers along highways, landscaping federal facilities with plants that are beneficial to pollinators and expanding pollinator habitat in conservation areas.

More information: Museum specimens reveal loss of pollen host plants as key factor driving wild bee decline in The Netherlands, <u>www.pnas.org/cgi/doi/10.1073/pnas.1412973111</u>

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