

In Ecuadoran Amazon, butterflies provide a gauge of climate change

April 22 2024, by Paola LÓPEZ



About three-quarters of crops producing fruits or seeds for human consumption depend on pollination, including from butterflies.

Biologists on a trail in the Ecuadoran Amazon hold their breath as they distribute a foul-smelling delicacy to lure butterflies, critical pollinators increasingly threatened by climate change.

A team has hung 32 traps made of green nets, each baited with rotting fish and fermented bananas. They are meant to blend in with the forest canopy. Their pungent odor clearly does not.

Since last August, a team of biologists and park rangers has been monitoring butterfly numbers in the Cuyabeno Wildlife Reserve, a park famed for its abundant flora and fauna.

They catch and document the colorful insects, releasing most with an identifying mark on their wings. Some of them, possibly from previously unknown species, are kept for further study.

The results of the team's work, however, have been discouraging.

Butterflies are "bioindicators," living organisms whose well-being provides a measure of the health of their surrounding ecosystem, and their numbers are decreasing, biologist Maria Fernanda Checa told AFP.

While the number of species may not have declined by more than 10 percent, in terms of absolute butterfly numbers "the decrease is very significant... maybe 40/50 percent," she said.

"It is something that alarms us."



The butterfly traps are made of green nets that blend in with the forest canopy.

Bioindicators

Under expedition leader Elisa Levy, a team checks the nets for captured [butterflies](#).

They hold the insects delicately by their tiny abdomens and manipulate their legs and wings with tweezers.

Some are bright red and blue, others have what resemble zebra stripes. Some are see-through, like glass.

About three-quarters of fruit- or seed-producing crops for [human consumption](#) depend on pollinators, which provide a free service worth billions of dollars.

The UN has warned that 40 percent of invertebrate pollinators—particularly bees and butterflies—risk global extinction, posing certain risks to humanity itself.

Butterflies, said Checa, are "very sensitive, even to small changes in the ecosystem" throughout their short lifespan from egg to caterpillar to reproductive adult.

Levy explained that [tropical plants](#)—unlike ones in regions with distinct seasons—are not accustomed to extreme weather variations.



Biologist Maria Fernanda Checa says butterfly numbers in the Cuyabeno Wildlife Reserve are dropping.



Butterflies are 'bioindicators,' living organisms whose well-being serves as a gauge of the health of the ecosystem they exist in.



Ecuador, a relatively small but extremely biodiverse country, hosts about 4,000 butterfly species.

If they do not adapt to a fast-changing climate, these plants could be lost, along with the butterfly larvae that feed on them.

Ecuador, relatively small but extremely biodiverse, hosts about 4,000 butterfly species—nearly as many as its much larger neighbors Peru and Colombia.

Yet in places like the Yasuni National Park, which neighbors Cuyabeno, "the rate of species discovery is slower than the rate of extinction," said Checa.

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