

Where Are the Fireflies Going?

By AP/MICHAEL CASEY

<http://www.time.com/time/health/article/0,8599,1837676,00.html>

(BAN LOMTUAN, Thailand) — Preecha Jiabyu used to take tourists on a rowboat to see the banks of the Mae Klong River aglow with thousands of fireflies.

These days, all he sees are the fluorescent lights of hotels, restaurants and highway overpasses. He says he'd have to row a good two miles to see trees lit up with the magical creatures of his younger days.

"The firefly populations have dropped 70 percent, in the past three years," said Preecha, 58, a former teacher who started providing dozens of row boats to compete with polluting motor boats. "It's sad. They were a symbol of our city."

The fate of the insects drew more than 100 entomologists and biologists to Thailand's northern city of Chiang Mai last week for an international symposium on the "Diversity and Conservation of Fireflies."

They then traveled Friday to Ban Lomtuan, an hour outside of Bangkok, to see the synchronous firefly *Pteroptyx malacca* — known for its rapid, pulsating flashing that look like Christmas lights.

Yet another much-loved species imperiled by humankind? The evidence is entirely anecdotal, but there are anecdotes galore.

From backyards in Tennessee to riverbanks in Southeast Asia, researchers said they have seen fireflies — also called glowworms or lightning bugs — dwindling in number.

No single factor is blamed, but researchers in the United States and Europe mostly cite urban sprawl and industrial pollution that destroy insect habitat. The spread of artificial lights also could be a culprit, disrupting the intricate mating behavior that depends on a male winning over a female with its flashing backside.

"It is quite clear they are declining," said Stefan Ineichen, a researcher who studies fireflies in Switzerland and runs a Web site to gather information on firefly sightings. "When you talk to old people about fireflies, it is always the same," he said. "They saw so many when they were young and now they are lucky now if they see one."

Fredric Vencl, a researcher at Stonybrook University in New York, discovered a new species two years ago only to learn its mountain habitat in Panama was threatened by logging. Lynn Faust spent a decade researching fireflies on her 40-acre farm in Knoxville, Tenn., but gave up on one species because she stopped seeing them.

"I know of populations that have disappeared on my farm because of development and light pollution," said Faust. "It's these McMansions with their floodlights. One house has 32 lights. Why do you need so many lights?"

But Faust and other experts said they still need scientific data, which has been difficult to come by with so few monitoring programs in place.

There are some 2,000 species and researchers are constantly discovering new ones. Many have never been studied, leaving scientists in the dark about the potential threats and the meaning of their Morse code-like flashes that signal everything from love to danger.

"It is like a mystery insect," said Anchana Thancharoen, who was part of a team that discovered a new species *Luciola aquatilis* two years ago in Thailand.

The problem is, a nocturnal insect as small as a human fingertip can't be tagged and tracked like bears or even butterflies, and counting is difficult when some females spend most of their time on the ground or don't flash.

And the firefly's adult life span of just one to three weeks makes counting even harder.

European researchers have tried taking a wooden frame and measuring the numbers that appear over a given time. Scientists at the Forest Research Institute Malaysia have been photographing fireflies populations monthly along the Selangor River.

But with little money and manpower to study the problem, experts are turning to volunteers for help. Web sites like the Citizen Science Firefly Survey in Boston, which started this year, encourages enthusiasts to report changes in their neighborhood firefly populations.

"Researchers hope this would allow us to track firefly populations over many years to determine if they are remaining stable or disappearing," said Christopher Cratsley, a firefly expert at Fitchburg State College in Massachusetts who served as a consultant on the site run by the Boston Museum of Science.

Scientists acknowledge the urgency to assess fireflies may not match that of polar bears or Siberian tigers. But they insist fireflies are a "canary in a coal mine" in terms of understanding the health of an ecosystem.

Preecha, the teacher turned boatman, couldn't agree more. He has seen the pristine river of his childhood become polluted and fish populations disappear. Now, he fears the fireflies could be gone within a year.

"I feel like our way of life is being destroyed," Preecha said.

Firefly Watch: <https://www.mos.org/fireflywatch/home>