

## Federal protection sought for Delaware-based firefly

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BETHANY BEACH – There’s ample reasons to stave off firefly extinction.

“From an environmental perspective, firefly larvae are carnivores that live in soil or leaf litter and eat soft-bodied arthropods like snails, slugs, and worms,” said Endangered Species Program Senior Scientist Dr. Tara Cornelisse, who’s based in Portland, Oregon.

“They are also important because they are indicators of health freshwater wetlands, their populations do well only when there are abundant and clean freshwater wetlands, so they indicate when that habitat is lost as well as when it is contaminated with pollutants.”

In an effort to save the Bethany Beach variety, the nonprofit Center for Biological Diversity petitioned for federal protection under the Endangered Species Act. Dr. Cornelisse was lead author on the petitions, which prompted the U.S. Fish and Wildlife Service to publicly announce that it’s considering the requests.

A 40-page study of the Bethany Beach firefly is online at [biologicaldiversity.org](http://biologicaldiversity.org).

Delaware’s Cape Henlopen (one firefly found) and Seashore state parks scarcely have any of the endangered insects anymore. Once abundant at the Tower Shores development, the firefly numbers have dwindled as well.

“That site has recently been and currently continues to be destroyed through housing construction that is directly eliminating this population’s habitat,” Dr. Cornelisse said.

The Bethany Beach firefly may receive federal Endangered Species Act protection to counter increasing threats to its survival. (Submitted photo/Christopher M. Heckscher, Delaware State University)

There's widespread concerns for the survival of many insects — evidence shows more than 40 percent of species could be facing extinction, according to the CBD.

There are seven Delaware coast sites where the Bethany Beach firefly have been confirmed and virtually all of them are smaller than a football field, Dr. Cornelisse said.

Federal protection would involve maintaining a critical habitat and monitoring activities that could put it in jeopardy.

“Under the law, any government agency that is going to undertake an activity in the firefly's habitat would have to consult with the Fish and Wildlife Service who would in turn have to determine if those actions would impact the firefly and to what degree,” Dr. Cornelisse said.

“Then, the actions could either be halted or altered to avoid harming the firefly and its habitat.”

Habitable locations dwindling

The study said the firefly was first noticed in 1953 and described it as “nocturnal (and) is active after full darkness and is characterized by two bright green flashes given off by males in search of female.”

It was also characterized as “an extremely rare and declining beetle.”

There's only a handful of firefly-habitable locations left, Dr. Cornelisse said, and “it is dependent on freshwater swales in coastal Delaware and so those need protected from further alteration.

“Other immediate actions that could help in its recovery include removal of invasive species, like phragmites, in its habitats and use of alternative methods to control mosquitoes so that pesticides are not used in the firefly's habitat, and reduction of light pollution.

“Also, because it is threatened by sea level rise and salt water intrusion, actions to reduce the impacts of climate change are important.”

There's an aesthetic value to fireflies flitting around, too.

"Fireflies are also important because they are so effective at connecting humans to nature," Dr. Cornelisse said.

"Everyone loves fireflies and they are beautiful. As someone who studies insects and promotes their conservation, I've seen a lot of different types of reactions to different insects and fireflies without fail get very positive reactions.

"As such, fireflies can serve as ambassadors for insect conservation and nature conservation in general.

"I think they also help people understand what is going on in regards to species loss. It is hard to visualize the impact human activities are having on species abundances, but because fireflies are so visible, people notice the loss and are able to make those connections and understand the need for conservation actions, like habitat protection.

"The Bethany Beach firefly in particular is important to the people of Delaware because its presence and health of its populations is dependent on freshwater- like humans."