

SUMMIT COUNTY CITIZEN VOICE

Deadly new fungal disease presents global threat to salamanders



A fire salamander from France. Photo via Wikimedia and the Creative Commons.

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Conservation groups call on U.S. Fish and Wildlife Service to act decisively to protect U.S. populations

FRISCO — A skin-eating fungus that has spread via the commercial sale of salamanders could pose a serious new threat to amphibians around the world.

Researchers in the Netherlands identified the fungus last year as they investigated a huge crash in the population of fire salamanders. In just four years, the fungus nearly wiped out fire salamanders in the Netherlands. It kills the amphibians by eating through their skin, exposing them to lethal bacterial infections.

Luckily for other amphibians, the new fungus does not appear to kill frogs and toads, said Collette Adkins Giese, a Center for Biological Diversity attorney and biologist focused on protecting endangered amphibians.

The disease has not yet reached the United States, but scientists say imports of infected individuals pose a risk of spreading the highly lethal disease to native salamanders in the United States.

The results of the Dutch study show that the fungal disease is very dangerous to salamanders and newts, but not to frogs, toads and snake-like amphibians called caecilians. The findings were published this week in the journal Science.

The fungus was found to be present in amphibians from Thailand, Vietnam and Japan as early as 1861, without causing disease, suggesting it originates from East Asia. The fungus probably arrived in Europe recently, and its presence in traded amphibians suggests that the intercontinental movement of amphibians explains its introduction.

So far the disease has only been found in The Netherlands and Belgium, but the researchers say it is likely to reach other European countries soon. The great crested newt, a protected species in Europe and the nearly threatened cave salamander *Hydromantes strinatii*, are among the species that rapidly die once infected.

“When a disease has been around for a long time, animals develop resistance to it. Globalisation has resulted in the movement of humans and animals all across the world, bringing pathogens into contact with hosts that haven’t had the opportunity to establish resistance,” said Ghent University professor An Martel. “

The study was led by Professors An Martel and Frank Pasmans at Ghent University in collaboration with an international team of scientists. “As a consequence, pathogens like *B. salamandrivorans* that are brought to a new environment can very rapidly threaten many species with extinction,” Martel said.

Asian salamanders and newts are traded in large numbers across the globe. More than 2.3 million Chinese fire belly newts were imported into the US between 2001 and 2009. The researchers found that the fungus can easily be transmitted between salamanders of different species by direct contact.

“If this disease is allowed to spread here in the United States, our salamanders will die off in mass numbers,” said Adkins Giese. “Chytrid fungus, along with the white-nose syndrome that’s wiping out millions of our bats, has shown the devastating impacts of wildlife diseases. We need to do everything in our power to protect our nation’s amphibians and prevent the spread of this disease.”

“The U.S. Fish and Wildlife Service must act fast to keep this disease from infecting wild salamanders in the United States,” said Peter Jenkins, president of the Center for Invasive Species Prevention. “With nearly 200 species, the United States is a global hotspot of

salamander biodiversity. If we don’t act fast, we could lose these vital and popular animals from the wild.”

Infected individuals could reach the United States through the extensive commercial salamander trade. For example, more than 2.3 million individuals of Chinese fire-bellied newt were imported into the United States from 2001 to 2009.

According to the study, the new fungus can effectively be transmitted across multiple salamander species through direct contact. The study warns that “the process of globalization with its associated human and animal traffic can rapidly erode ancient barriers to pathogen transmission” and these pathogens have “the potential to rapidly pose a threat of extinction.”

Scientists have developed a DNA-based test for detecting Bs, and infected animals held in captivity can be effectively treated with anti-fungal baths. But once the disease enters wild populations, it is nearly impossible to stop its spread to new populations. Environmental groups are calling for the U.S. Fish and Wildlife Service to suspend all imports of salamanders into the United States unless they are certified to be free of the fungus.