



Introduction

Chytridiomycosis is a disease caused by fungus from the *Chytridiomycota* and *Blastocladiomycota* phyla that affects amphibians. More specifically, the fungus *Batrachochytrium dendrobatidis* (*Bd*) is detected worldwide in over 350 amphibian species. Chytrid has been documented in New Jersey and is a current threat to our amphibian populations.

Another chytridiomycosis causing fungus, *Batrachochytrium salamandrivorans* (*Bsal*), has been identified as an emerging pathogen and has the potential to do significant damage to salamander populations in the United States if introduced.

Species Affected

Chytridiomycosis affects over 350 amphibian species worldwide and has caused a decline in over 200 species, and in some cases extinction. Chytrid typically affects frog species, but it does not affect all frog species and can also affect other amphibians, like salamanders. Chytrid has not been known to affect humans.

Clinical Signs

The early signs of chytrid includes anorexia and lethargy. Chytrid can cause shedding of the skin, reddening of the skin, abnormal feeding behaviors, discoloration around the mouth, convulsions, and lack of righting reflex. Ultimately, chytrid causes the skin to thicken which results in the skin losing its abilities to perform gas exchange and uptake salts necessary for the amphibian circulatory system. This can cause the heart to stop beating and lead to death. It is also possible for some species to not be affected by the fungus, but still carry and transmit the fungus. Chytrid can cause mass mortality events in amphibians.

Transmission

Chytrid fungus is transmitted through the environment, particularly in water. The fungus spreads by microscopic zoospores that disperse in the water. Zoospores can search for new hosts by means of swimming as they have flagella which propel them through the water. It is also suspected that transmission can occur by direct contact with another diseased amphibian, but more research is needed to

confirm this. Zoospores can live in water for many weeks and can live much longer with warmer water temperatures.

Diagnosis

To diagnosis chytrid, swabs are taken and tested in a laboratory to detect DNA of Bd or Bsal. It is also possible to see the fungus and zoospores with histology.



Image from [USGS](#)

Epidemiology

Chytrid was first documented in Australia in 1993 and was found on preserved specimens from Australia (1978) and Africa (1938). In 1998, there was an outbreak in Australia and Central America which spread to the United States where it has been present since that time. It is believed that Chytrid initially spread from commercial trade of African clawed frogs (1960's and 1970's) due to the earliest detection from preserved African clawed frogs from 1938. Though the fungus is detected in African clawed frogs, they are tolerant to chytrid and can serve as means of spreading the virus further. In addition to the African clawed frog, the cane toad and American bullfrogs (present in NJ) are also tolerant to the fungus. It is important to note that these species are common in the exotic pet trade, and it is crucial that these captive animals do not get released into the wild as they are at risk of spreading chytrid.

FAQ

Can I get chytrid from touching an infected frog?

No, chytrid does not affect humans.

I found a dead frog, is it from chytrid?

One dead frog is not necessarily a concern, but if you find a group of dead frogs or salamanders, please contact 1-877-WARNDEP.

Additional Information

[Chytrid Fungus | Center for Invasive Species Research \(ucr.edu\)](#)

[Chytridiomycosis | Cornell Wildlife Health Lab](#)

[Origin of the Amphibian Chytrid Fungus - Volume 10, Number 12—December 2004 - Emerging Infectious Diseases journal - CDC](#)

[Batrachochytrium salamandrivorans \(Bsal\) | U.S. Geological Survey \(usgs.gov\)](#)



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