

Researchers find male frogs infected with fungus have more enticing calls

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Tree frog. Credit: Julia Platter

A pair of researchers with Seoul National University has found that Japanese tree frogs infected with *Batrachochytrium dendrobatidis* (Bd) fungus make different advertisement calls than uninfected frogs. In their paper published in *The Royal Society Biology Letters*, Deuknam An and Bruce Waldman explain their study and results and what impact the change in calls has on the frogs.

Bd causes a disease called chytridiomycosis in amphibians, where the skin is depleted and the immune system compromised—in most species it has been found to be deadly, killing off millions of frogs, salamanders and other species. Some experts believe it could ultimately wipe out a

third of all amphibian populations worldwide. The disease was first noted by scientists in the 1990's but since that time, researchers have found preserved samples going back as far as 1938. Scientists around the world have been working to better understand the fungus that causes the disease in hopes of perhaps preventing its spread further—one important area of research surrounds the Japanese tree frog, which become infected, but do not usually die from the associated disease. To learn more An and Waldman focused their attention on 42 of the male specimens in the wild, making recordings of their mating calls. They looked for such things as call duration, pulse length, pitch and how often the calls were repeated. They also tested the frogs for infection.

In looking at their data, the researchers found that nine of the frogs were infected, and surprisingly, they were also the group that appeared to put the most effort into their mating efforts—their calls were longer and faster—this was surprising because another symptom of chytridiomycosis is lethargy. Also interesting was that the females in the area generally found the more energetic calls more enticing than normal, which meant the infected frogs found more success mating than those that were uninfected.

The researchers offer two perspectives on their observations—either the fungus is causing the frogs to behave differently so as to improve its infection abilities (male frogs passed on the fungus to females during mating), or the male [frogs](#) were simply reacting to their stressed condition by attempting to reproduce earlier, due to an expected shortened lifespan.

More information: Deuknam An et al. Enhanced call effort in Japanese tree frogs infected by amphibian chytrid fungus, *Biology Letters* (2016). [DOI: 10.1098/rsbl.2016.0018](https://doi.org/10.1098/rsbl.2016.0018)

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