

★ NEWS FEATURE

Fighting a fungal scourge

Researchers trying to rescue amphibians from a global fungus epidemic are finding that bacteria may be their best allies.

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More than a decade ago, amphibian microbial ecologist Reid Harris watched a mother salamander as she marched in a figure-eight pattern through her clutch of soft, jellylike eggs. He knew that her strange walk, rubbing up against her brood, transferred beneficial bacteria from her skin onto the eggs to fight off fungal infection. Then something clicked. Harris wondered if she might also be showing him the solution to a scourge threatening hundreds of other amphibian species around the world.

Then, as now, amphibians were dying in droves. At least one-third of species face extinction, with at least

90 confirmed gone and another 500 in decline (1, 2). The major culprit is the skin disease chytridiomycosis, caused by the waterborne fungus *Batrachochytrium dendrobatidis*, or *Bd* for short. Under a microscope, fungal bodies anchor themselves in the translucence of frog skin and often group together to form a collection of small spheres. Chytridiomycosis kills by disrupting ion and fluid transport, eventually stopping the host's heart (3).

A particularly deadly *Bd* lineage arose in the Korean peninsula sometime in the last century, the source of a pandemic that fanned out across the world



To fight the deadliest wildlife disease on record, a fungus responsible for the decline or disappearance of hundreds of amphibian species including the Panamanian golden frog, researchers are looking to the bacteria that live on frog skin. Image credit: Flickr/Brian Gratwicke.

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