

# Frog-killer disease was born in trade

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The global amphibian trade [spread the lethal chytrid fungus](#), which is decimating frogs around the planet, and it now looks like it may have created the disease in the first place.

The team behind this finding are calling for an amphibian quarantine to help slow the disease's spread.

[Rhys Farrer](#) of Imperial College London and colleagues sequenced the genomes of 20 samples of the offending fungus, *Batrachochytrium dendrobatidis* (*Bd*), collected in Europe, Africa, North and South America and Australia.

They found that 16 of the 20 samples were genetically identical, belonging to a single strain called *BdGPL* that had spread to all five continents. Tests on tadpoles also revealed that the strain was extremely virulent.

*BdGPL*'s genome showed that it had formed when two strains mated, some time in the past 100 years. The best and simplest explanation is that 20th-century trade, which shipped amphibians all over the world, enabled the mating, says Farrer's supervisor [Matthew Fisher](#).

"We've got to restrict trade, or at least make sure that amphibians are not contaminated," says Fisher. One approach would be for countries to quarantine all imported amphibians and only allow them to stay if they are uninfected.

## Last redoubts

When it emerged that trade was spreading chytrid, the [World Organisation for Animal Health](#) made the disease [notifiable](#), meaning that countries must report whether they have it or not. But that doesn't stop it spreading.

The two places in most urgent need of protection are Madagascar and south-east Asia, says Fisher: "They're the last redoubts of uninfected amphibian species." Both are hotspots of amphibian diversity, and are clear of *BdGPL*. Madagascar remains uninfected despite rampant *BdGPL* in Africa, and a recent survey shows that Asian chytrid strains are not very virulent ([PLoS One](#), DOI: [10.1371/journal.pone.0023179](#)).

If *BdGPL* reaches these places, it could quickly devastate their frogs. Within months of it reaching Montserrat, in the West Indies, in early 2009, conservationists had to fly [giant ditch frogs](#) – also known as mountain chickens – out of the country to [save them from extinction](#).

Countries that already have *BdGPL* should also institute quarantine, says [Peter Daszak](#), president of EcoHealth Alliance in New York. "This research shows that recombination can occur and give rise to new virulent strains," he says. "Blocking introduction of new strains will cut down on this."

Daszak adds: "It will be hard to stop the spread of new lineages of *Bd*, but if we look at the devastation that this pathogen has already caused, we desperately need to try."

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