

notes on *Bd*

16 January 2022

- general info here and here; also see chapter 7 from Wayne and Bolker (2015), posted on Teams
- most chytrid fungi are harmless **saprophytes** or parasites of microbes, but a few are pathogenic on amphibians, including ...
- *Batrachochytrium dendrobatidis* ("Bd") (Joyce Longcore)
- life cycle: *thallus* to *zoosporangia* (frog skin) to *zoospores* (free living, motile, aquatic) ...
- where did it come from?
 - **novel pathogen hypothesis**: mutation/speciation + dispersal
 - **tipping point hypothesis**: in populations all the time, but something happened to make it virulent
- extinction paradox (De Castro and Bolker 2005)
 - **extirpation** (local extinction) vs global ('true') extinction
 - **density-dependent** parasites can't cause host extinction (in simple theoretical models!)
 - alternatives: density-independence, small populations, reservoirs
- how does it move around/persist in the environment?
 - alternative hosts?
 - environmental reservoir?

References

- De Castro, Francisco, and Benjamin Bolker. 2005. "Mechanisms of Disease-Induced Extinction." *Ecology Letters* 8 (1): 117–26. <https://doi.org/10.1111/j.1461-0248.2004.00693.x>.
- Wayne, Marta, and Benjamin Bolker. 2015. *Infectious Disease: A Very Short Introduction*. Oxford University Press.

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