Amphibian disease risk higher in undisturbed habitats

May 30 2011

Amphibians may be more susceptible to disease in undisturbed natural habitats, a study in this week's issue of *PNAS* finds.

Guilherme Becker and Kelly Zamudio examined tropical frog populations across Costa Rica and eastern Australia to identify relationships between what many researchers believe are the two primary causes of global amphibian decline: habitat loss and a disease caused by the fungus Batrachochytrium dendrobatidis (Bd).

Paradoxically, the authors report that amphibians in pristine habitats are more likely to be infected by Bd, whereas in locations where deforestation has significantly disturbed the natural ecosystem, the pathogen causes fewer and less intense infections.

The authors propose that altering the natural habitat may disrupt the microclimate in which Bd thrives, or that habitat loss, which reduces species diversity and the number of susceptible hosts, hampers the pathogen's ability to spread.

But because most tropical frogs cannot tolerate deforestation, the authors caution, a lowered threat of disease in these ecosystems is unlikely to offer respite to declining amphibian species.

The findings suggest instead that researchers must better understand how habitat loss and disease interact if they hope to accurately predict trends in future amphibian populations, according to the authors.

More information: "Tropical amphibian populations experience higher disease risk in natural habitats," by C. Guilherme Becker and Kelly Zamudio, *Proceedings of the National Academy of Sciences* (2011).