

Boreal toad habitat selection in relation to disease and cattle grazing

Gabe Barrile, Anna Chalfoun, Annika Walters
Wyoming Cooperative Fish and Wildlife Research Unit
University of Wyoming

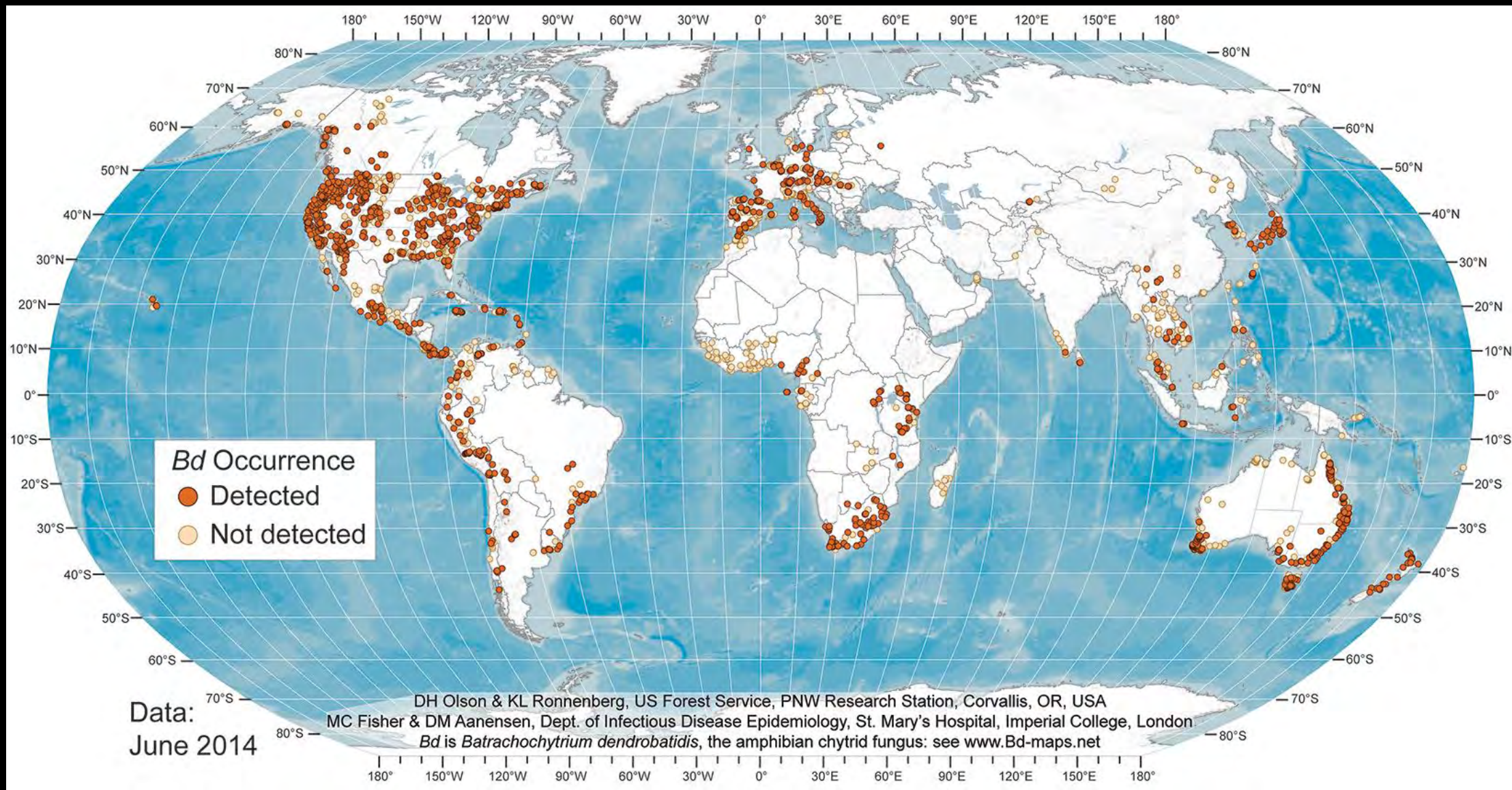


Global Amphibian Declines

~ 43 percent of species in decline



Chytrid Fungus (Bd)



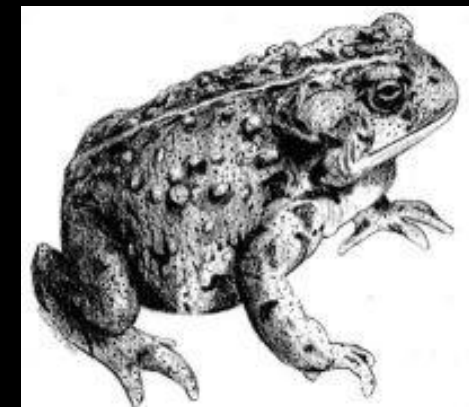
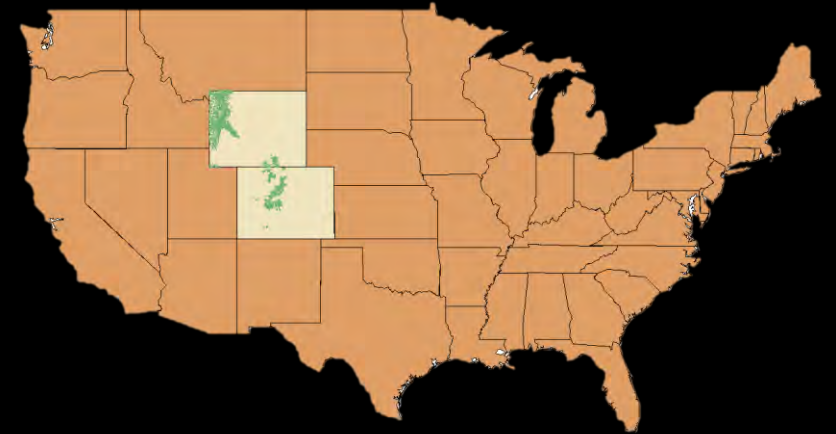
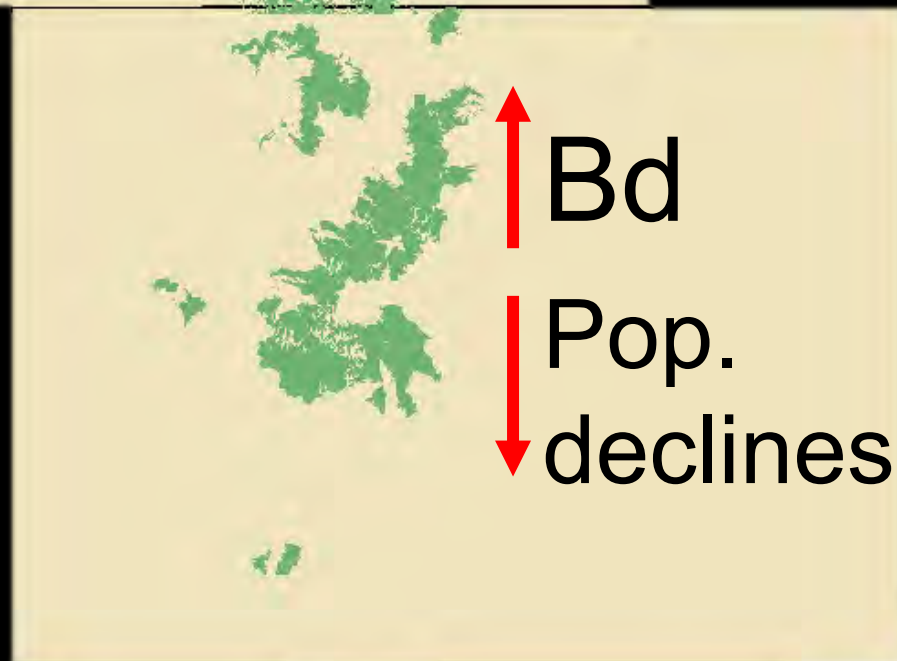
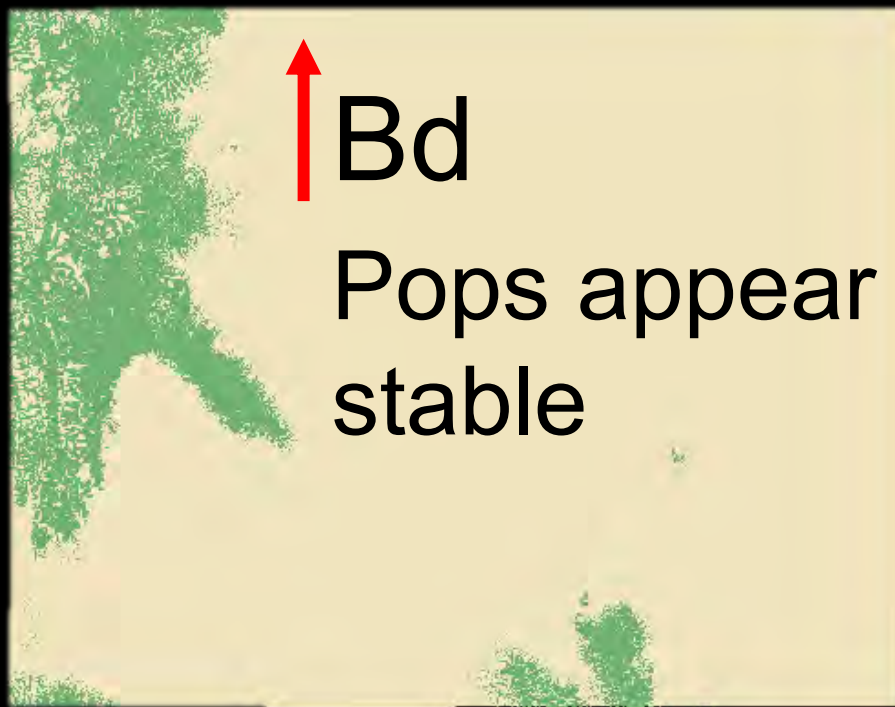
Chytrid Fungus (Bd)

“The worst infectious disease ever recorded among vertebrates in terms of number of species impacted, and its propensity to drive them to extinction”

Chytrid Fungus (Bd)

- Thrives in **cool, wet** conditions
- Causing extensive mortality worldwide; however, some populations appear unaffected





Wildfire



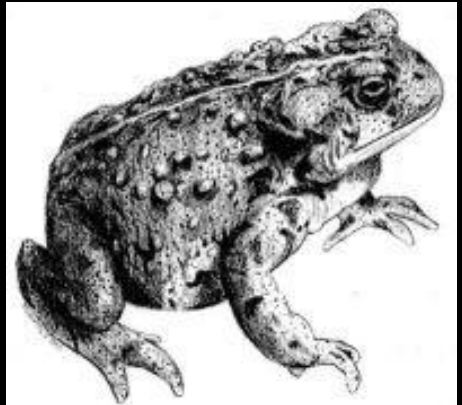
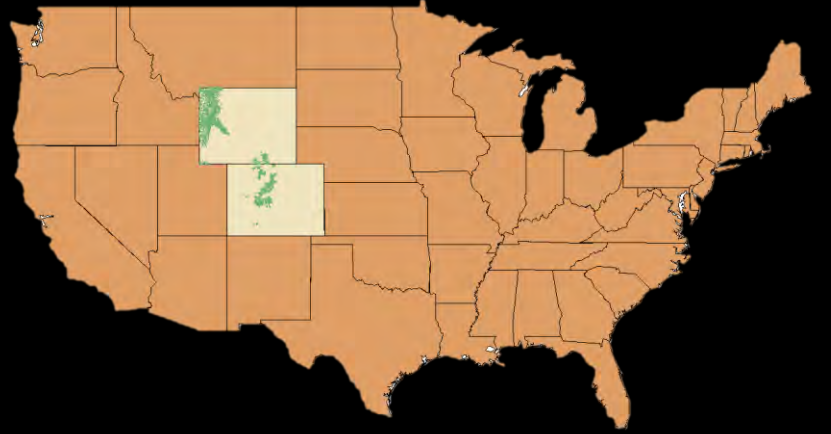
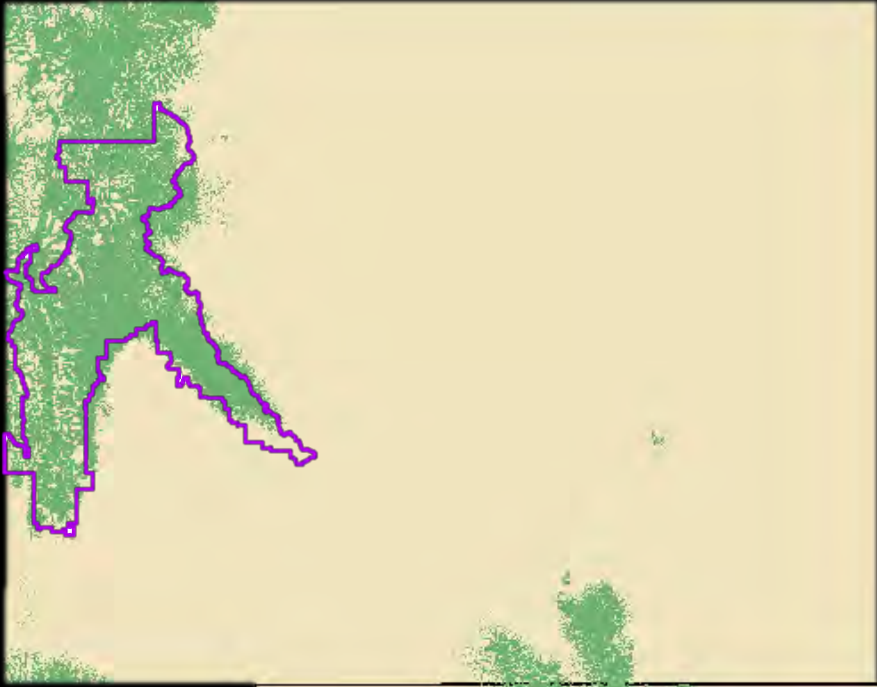
Hossack et al. 2013

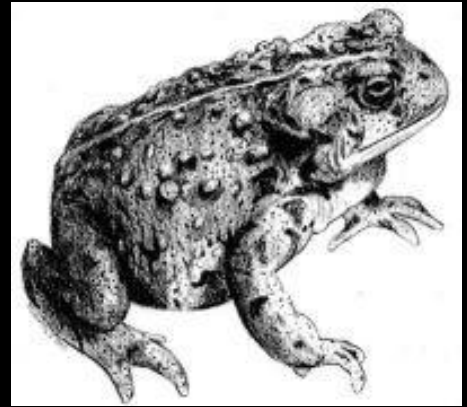
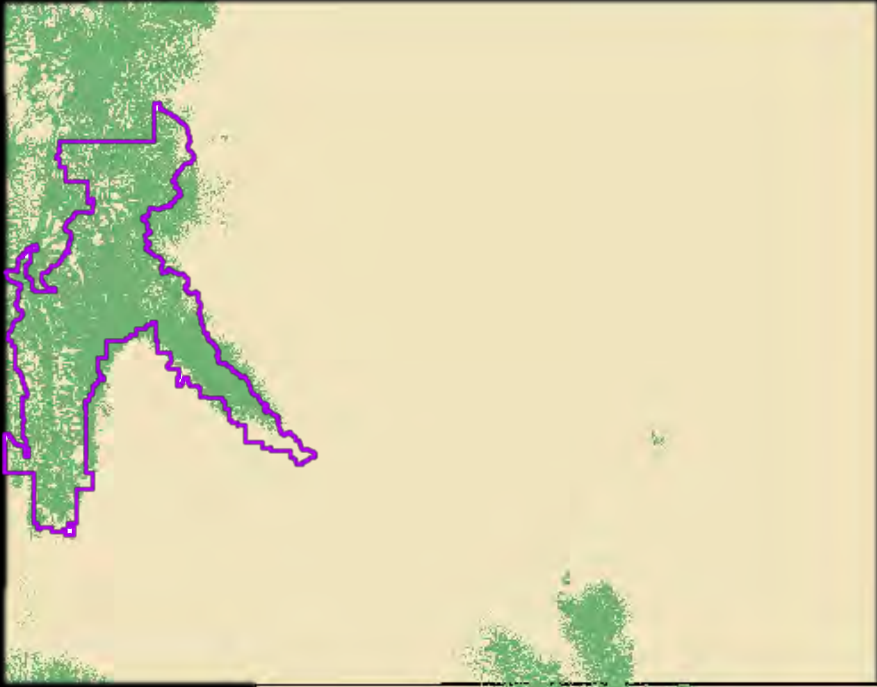
Deforestation

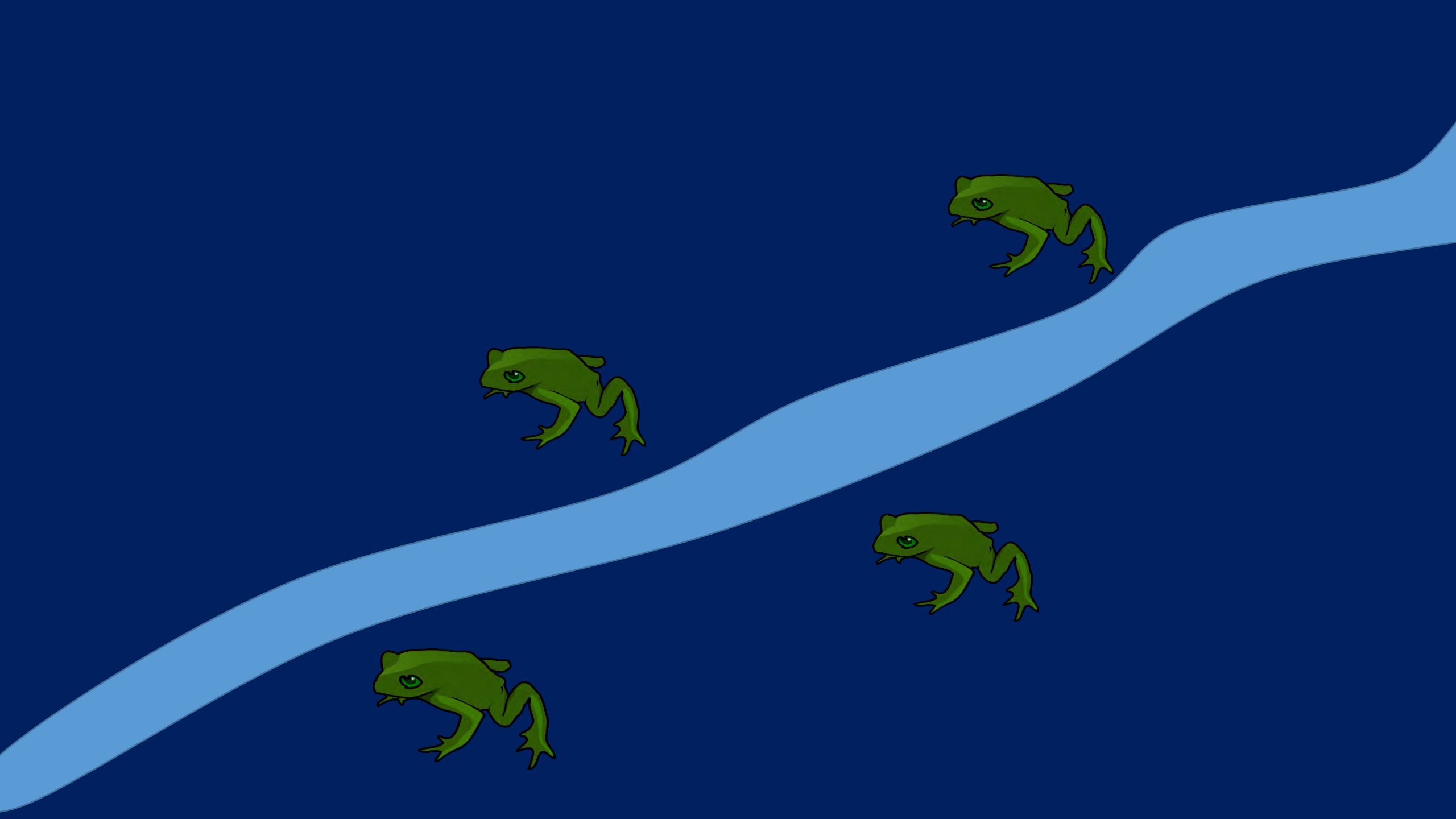


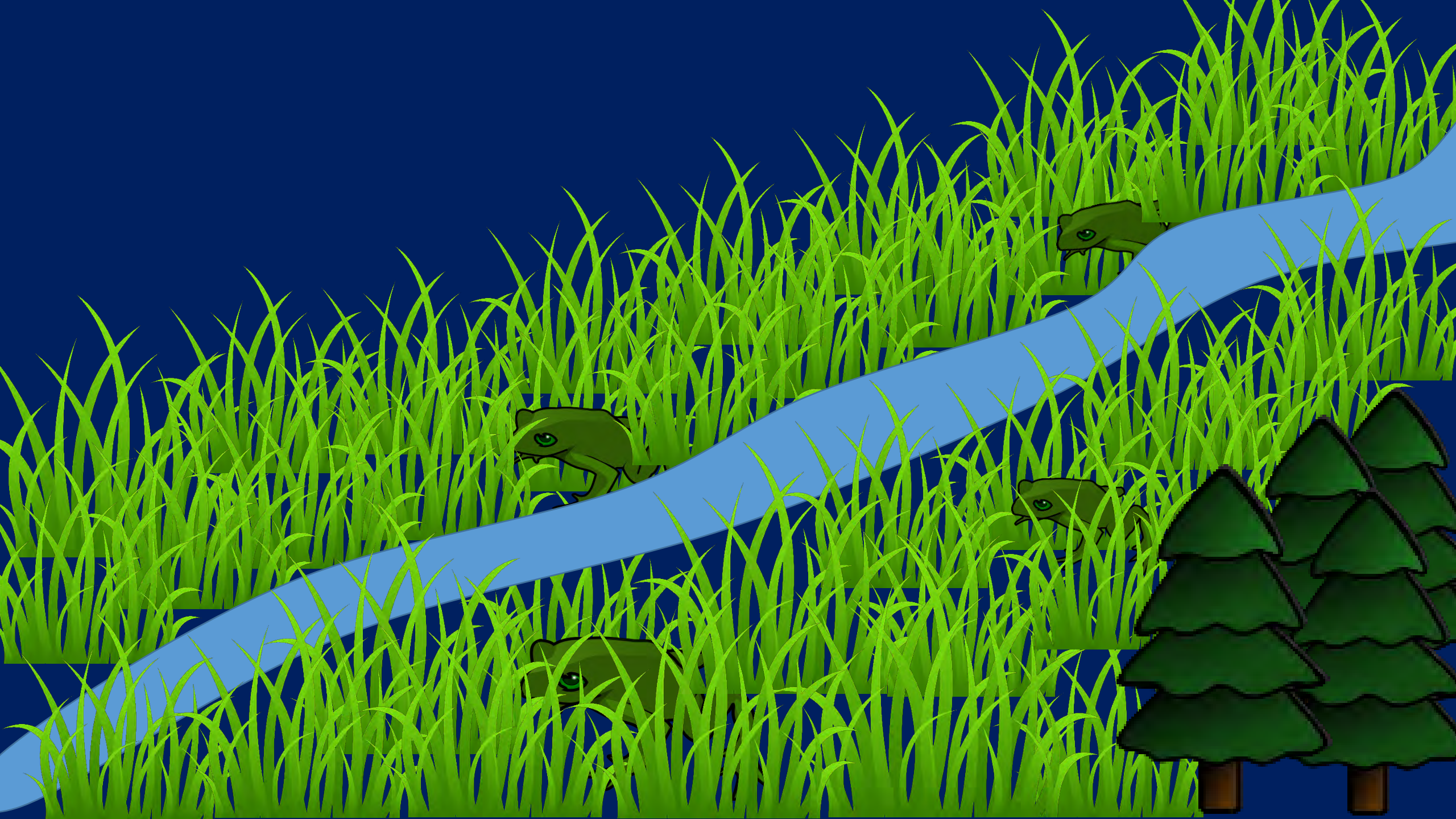
Becker and Zamudio 2011; Van Sluys and Hero 2009

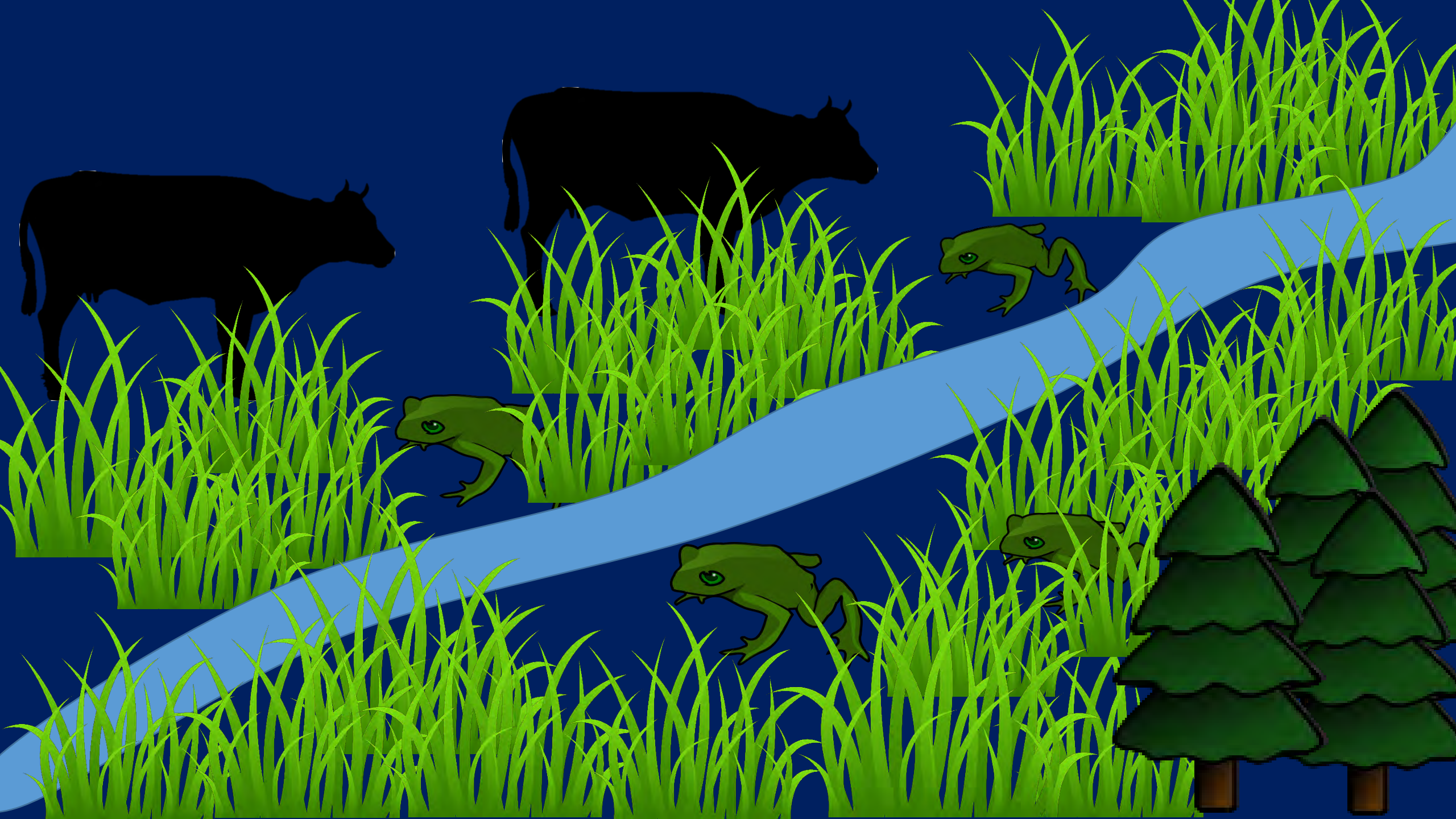
- Amphibians found in **disturbed** areas were less likely to be infected with Bd
 - Disturbance creates habitat unfavorable for Bd growth
 - More open, warmer, drier areas
- Let's return to CO and WY boreal toads











Study Sites











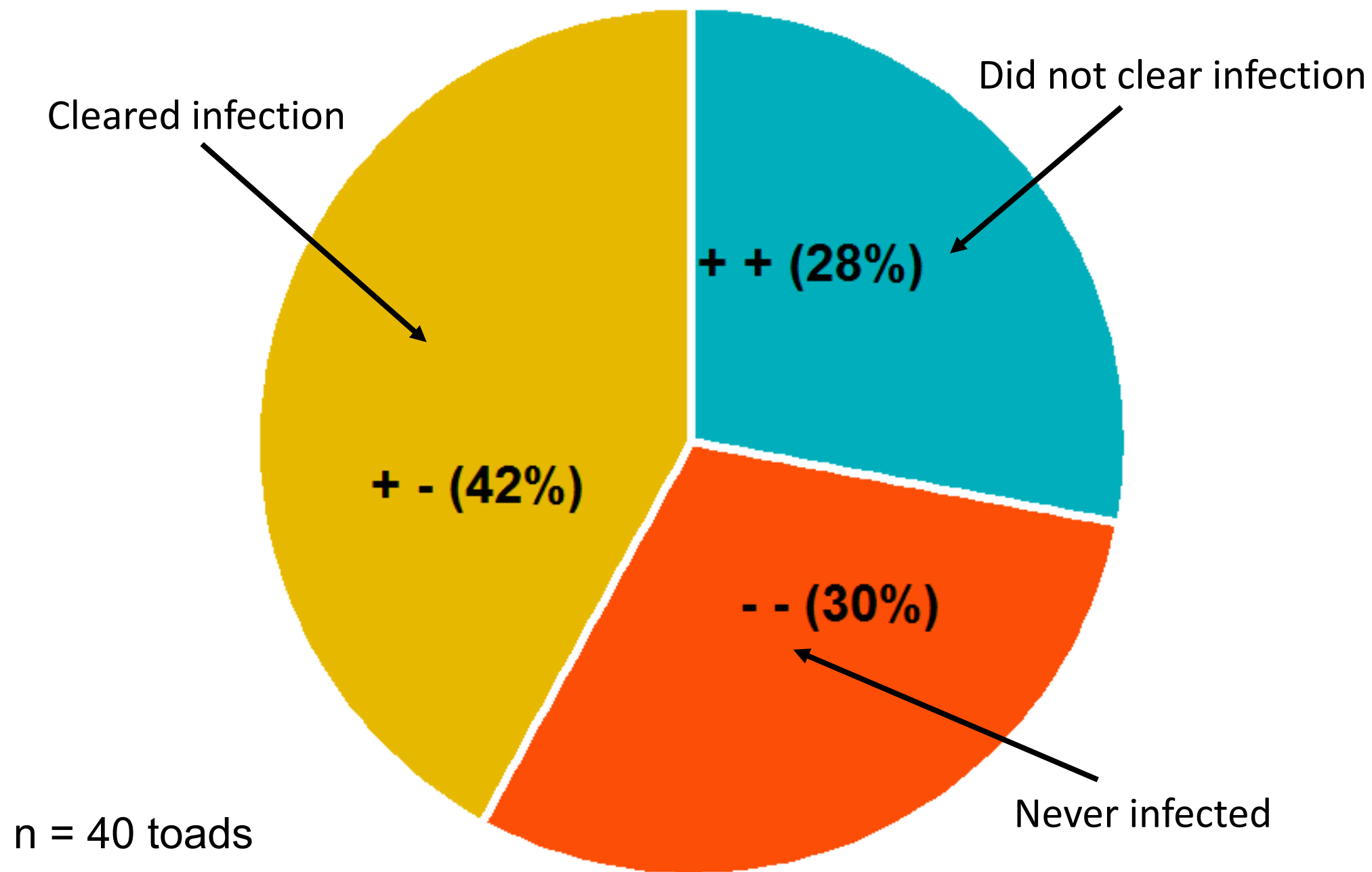




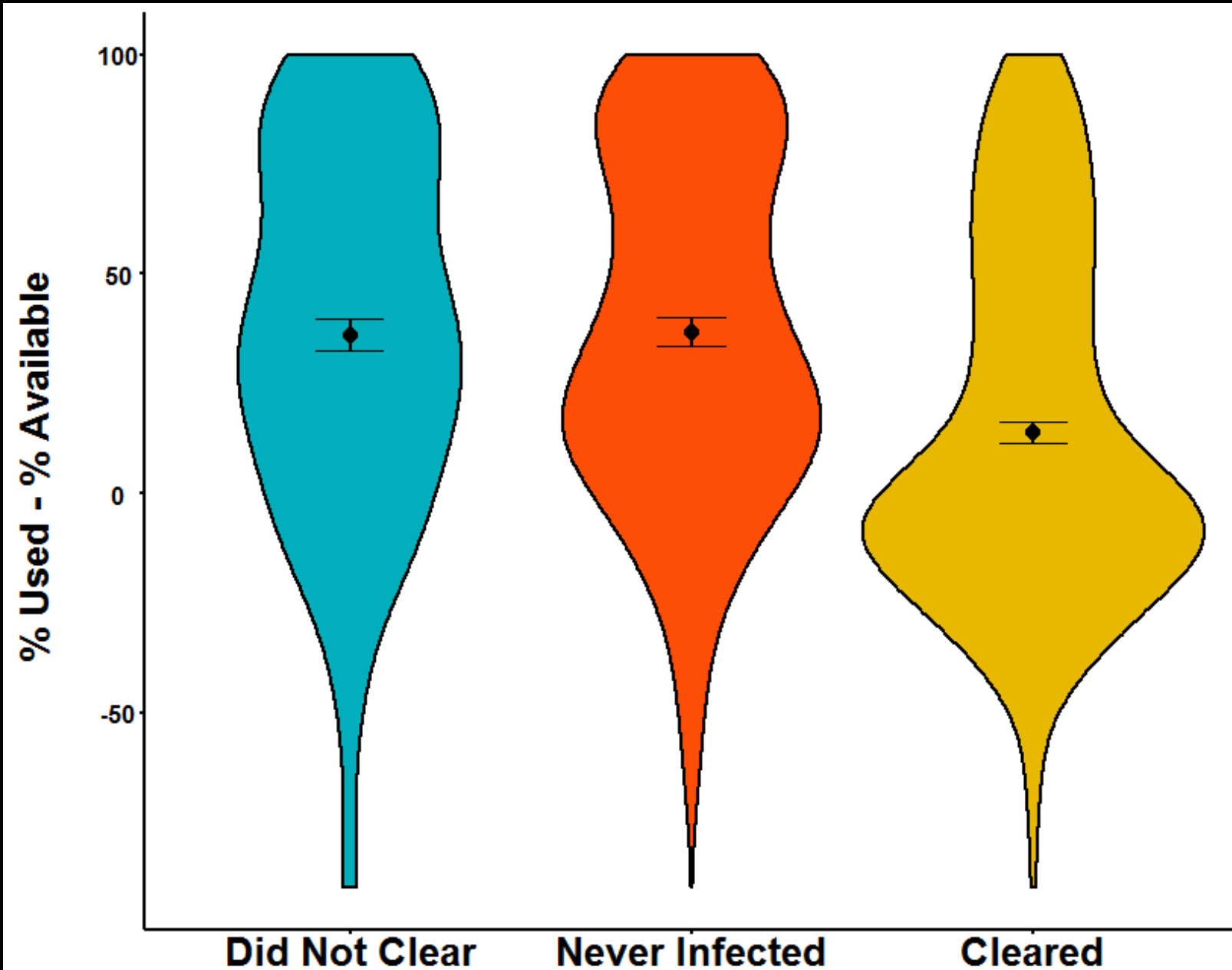




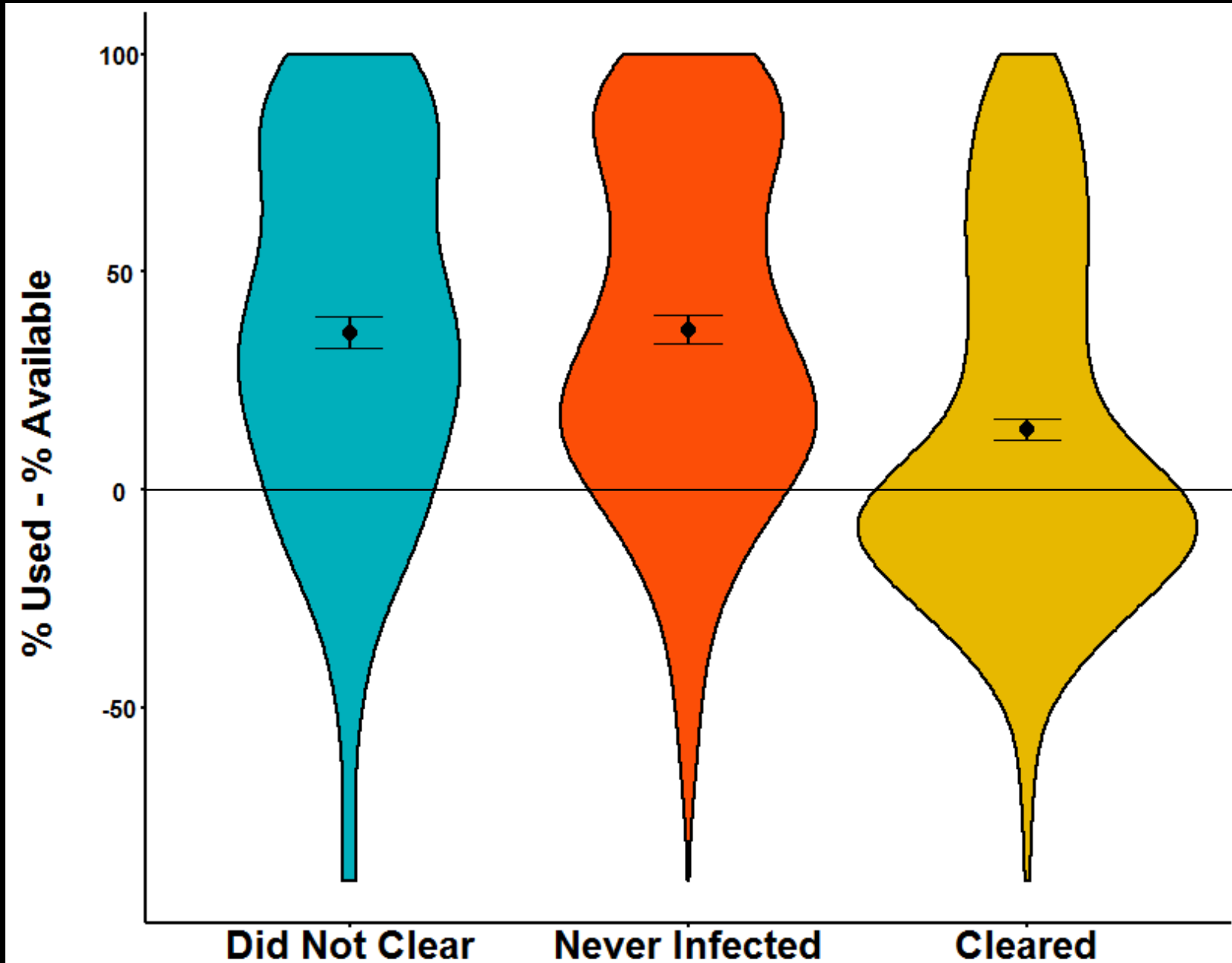




Selection for Percent Cover



Selection for Percent Cover





Bd and Habitat Selection

- Suggests behavioral response to infection in some toads
 - swab toads for Bd at every relocation
- Suggests some level of grazing could be beneficial, but what level is unclear

Grazing Intensity

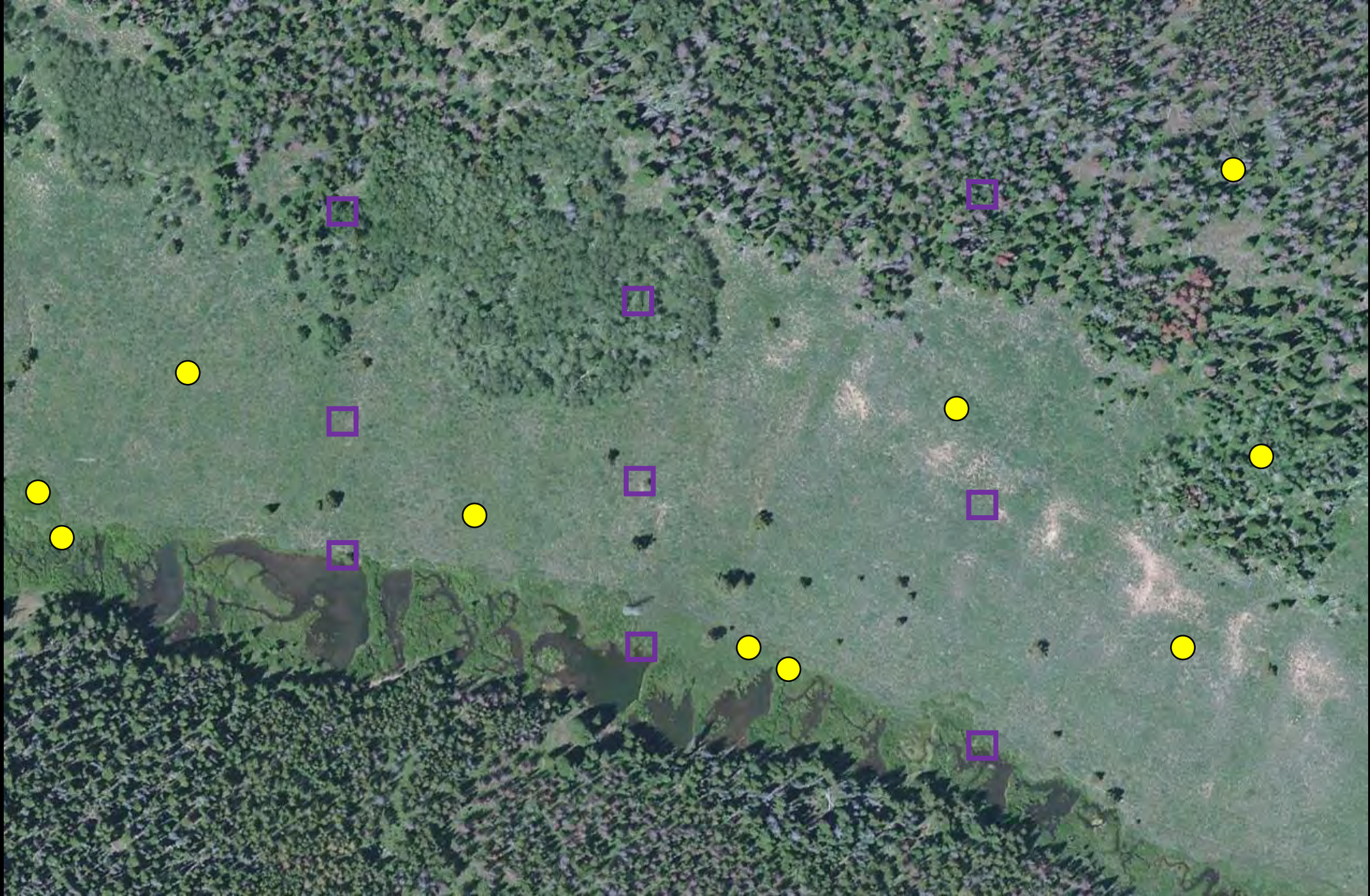


Grazing Intensity









Boreal Toad Conservation









Habitat Selection

Predictor	Odds Ratio (95% CI)
Willow (+)	1.37 (1.05, 1.80)
Burrow (+)	4.76 (1.71, 9.95)
Soil Moisture (+)	1.13 (1.08, 1.18)





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Questions?



Exploring Our Data

Breeding Sites



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explore data

Cattle Exclosures



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Home Ranges



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