

Herptile Inventory and Monitoring in the Powder River Basin, WY 2008 Progress Report

**A cooperative agreement between the
Wyoming Natural Diversity Database
and the Aquatic Task Group**

Contributors:

Hannah Griscom, Zoologist, WYNDD

Bill Ostheimer, Wildlife Biologist, BLM, Buffalo

Lindsay Schaffner & Julianne Koval, Biological Technicians, WYNDD

Background and Objectives

- Reptiles and amphibians have a poorly understood distribution in the Powder River Basin.
- Energy development may impact populations through changes in the abundance and quality of surface water, and expanding network of roads.
- This project attempts to collect baseline information and begin looking at potential impacts by:
 - Determining native and introduced amphibian and reptile baseline composition and distribution.
 - Investigating potential impacts of CBNG development.
 - Establishing a repeatable monitoring protocol to evaluate changes in future populations.

Sampling Locations

- **Using a variety of methods, we are surveying throughout the Basin in areas:**
 - Along a gradient of CBNG development
 - Likely to see more CBNG development in the future
 - In naturally-fed and CBNG-produced reservoirs
 - Along the Powder River and major tributaries



Sampling Locations

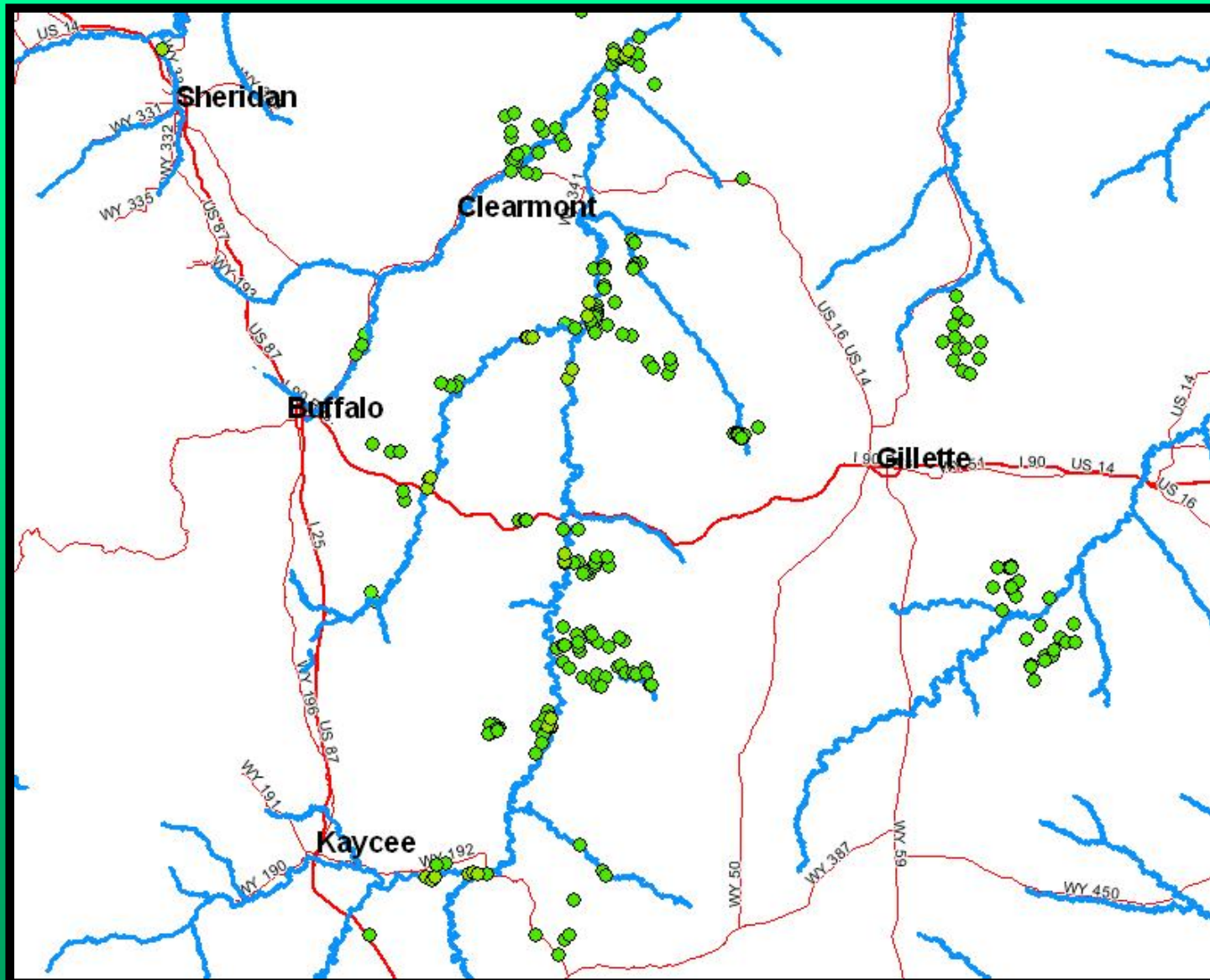
- Using a variety of methods, we are surveying throughout the Basin in areas:
 - At sites where USGS is collecting extensive biotic community information
 - At sites where the BLM is monitoring water quality
 - At sites sampled by WY Game and Fish Dept from 2004-2006 (led by William Turner)
 - With different vegetation communities and soil types



Methods

- Visual encounter surveys (along reservoirs and riparian areas)
- Nocturnal call surveys
- Roadkill surveys (fixed sections of roads surveyed for dead herps)
- Reptile hibernaculum (where snakes spend the winter)
- We collect:
 - Species, life stage, and location information
 - Habitat and weather information
 - Basic water quality data
 - Samples for Chytridiomycota fungus
 - Dead animals found
 - Tadpoles (for species identification)

- Most of our work is concentrated in Hydrologic Units (Level 6 HUCs) across the basin. Green dots represent sampling locations.



Preliminary Findings

- Thanks to a wet spring, our understanding of Plains Spadefoot and Great Plains Toad distribution in the Basin is much improved.



Preliminary Findings

- Many CBNG-water reservoirs are not suitable breeding sites for toads and frogs. This is in part due to varying water levels and lack of vegetation and cover.



Preliminary Findings

- Large mortalities of Tiger Salamander larvae have been found at some CBNG-water reservoirs this spring. The cause(s) are yet unclear but disease and/or water quality problems are being considered.



Preliminary Findings

- Final report will be submitted to the BLM and Aquatic Task Group by January 1, 2008



Thank you!