# Effects of Coalbed Natural Gas Development on Herpetofauna in the Powder River Basin

Tiffany D. Holland, Robert G. Bramblett, and Windy N. Davis, Montana Cooperative Fishery Research Unit, Department of Ecology, Montana State University, P.O. Box 173460, Bozeman, MT 59717

Coalbed natural gas (CBNG) development is expanding worldwide, yet the full ecological impacts are unknown. Changes in water quality and surface disturbance associated with CBNG development have potential to alter the herpetofauna present. We evaluated whether development affects herpetofauna in the Powder River Basin in Montana and Wyoming. The purpose of the study was to determine if herpetofauna was different in riparian areas of streams with and without CBNG development. We sampled 20 sites on eight streams in areas with development and 20 sites on eight streams in areas without development. Streams with-out development were deeper (*t*-test; $P = 0.04$), but the mean depth was only 8.4 cm deeper, which may not affe ct amphibians and reptiles. There were no significant differences between sites with and without CBNG development in water quality (stream conductivity, dissolved oxygen, water temperature, pH) or herpetofauna present (species richness, number of indi-viduals, number of northern leopard frogs).