

Western Toad monitoring in Jackson Hole, 2019

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Executive Summary

The Western Toad is currently regarded as the scarcest of Jackson Hole's extant native amphibians, but 65 years ago was described as the most widespread species. On-going amphibian monitoring programs have not been sufficient to track if breeding populations of toads are persisting on public lands in Jackson Hole. This project sought to remedy the gap in information by surveying toad breeding areas identified previously in Grand Teton National Park, the National Elk Refuge, and R Park. In 2019, we visited all 23 known and targeted areas. Toad reproduction was documented in 14 areas: 10 in Grand Teton National Park, 3 areas in National Elk Refuge, and 1 area within R Park. Of the 9 areas where toads were not detected, 4 areas presented conditions that prevented adequate surveys but may be suitable in other years, 3 areas appeared to be unsuitable due to loss of habitat and beavers, and 2 areas provided no detections of toad tadpoles or metamorphs in two rounds of surveys. In summary, we detected toad reproduction at 14 of 19 areas (74%) deemed to have adequate survey effort in 2019.

Western Toads have persisted in a dispersed set of breeding locations extending from JDR Rockefeller Memorial Parkway near the south edge of Yellowstone National Park to R Park near Wilson, with some probable losses over the past decade. All known sites are at lower elevations and in proximity of the Snake River (including Jackson Lake reservoir) and its tributaries. Habitat includes river/stream side channels and pools, Jackson Lake bays, man-made ponds, restored quarry pits, natural lakes/ponds, and beaver complexes.

Challenges faced by breeding toads include the timing of snowmelt and Jackson Lake dam operations, which can adversely affect sites far above and below the dam. Lack of beavers constrains the suitability of old breeding sites and the creation of new ones. Disturbance at sites with high levels of human recreation (boating and swimming) likely inhibits tadpole development and survival. Road-kill on highways, small roads, and parking areas has been observed and may occur much more often than we know. Infrastructure (e.g., roads, maintenance areas, culverts, boat launches) can fragment toad habitat, creating traps and barriers. Measures that could benefit conservation of Western Toads in Jackson Hole in the short term include public information and education at particular high-use recreation sites, and by monitoring and mitigating effects at sites where breeding and migrating toads are affected by management projects. To understand Western Toad status and trends, an adaptive long-term monitoring program is needed for this species. Conservation measures over the long term could include installation and maintenance of amphibian-friendly structures where roads cross streams and wetlands, beaver protection/restoration in the region, actions to minimize the risk of spreading aquatic diseases, and attention to toads and other amphibians in management planning and project implementation to reduce site-specific impacts.

