

**Completion Report
2019 Madison Arm Spadefoot Toad Habitat Enhancement
Project**

Submitted to NorthWestern Energy Wildlife TAC

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Background

The furthest west extent of the range of the Plains spadefoot on the Custer Gallatin National Forest (and the highest elevation population recorded) is located in the Hebgen Lake area in the vicinity of West Yellowstone, Montana. A small number of breeding sites have been found around the periphery of Hebgen Lake in shallow ephemeral ponds that are hydrologically connected to the lake. Given the scarcity of breeding habitat, several artificial breeding sites were created in 2012. Monitoring has indicated that one of the sites is currently used for breeding, while a second, slightly deeper pond, is not. Based on the relative scarcity of suitable breeding habitat, we have determined that there is a need to provide additional suitable breeding habitat for this species. Knowledge gained during the previous breeding habitat enhancement effort and subsequent monitoring will be used to guide future habitat enhancement activities.

The Northwestern Energy *Updated Five Year (2018 thru 2022) Madison and Missouri River Wildlife and Terrestrial Habitat Plan (per Project 2188 License Articles 411, 418, 421, 423, and 424)* states that under Article 423 NorthWestern Energy will develop a vegetation and wildlife monitoring and enhancement plan that includes specific goals, objectives, and standards to enhance native plants and wildlife populations on the lands and waters associated with the project. The purpose of Article 423 is to ensure that native plant and wildlife populations in the project area will be enhanced. This project addresses habitat enhancement measures for the native Plains spadefoot toad that are pertinent to Article 423.

Objective

To enhance or create breeding habitat for the Plains spadefoot at up to five locations along the Madison Arm of Hebgen Lake.

Methods

Based on monitoring and accumulated knowledge of the breeding habitat requirements of this species, the Hebgen Lake Ranger District proposed to create several (up to five) new breeding sites that mimic natural breeding sites and the successful artificial site that was previously created. A skid steer with a bucket and an excavator attachment would be used to excavate up to five small, shallow (2-3 feet deep) depressions in the sedge flats adjacent to Hebgen Lake that will fill and drain as the lake level fluctuates. Sites would be selected where hydrologic connectivity with the lake can be ensured and the potential for fish to invade the depressions minimized by the presence of existing obsidian sand levees along the lake shore. Existing vegetation mats would be stripped off and set aside during excavation. Once the depressions are created, the sedge mats would be used to line the depressions. Excavation would occur in the fall when the lake level has been drawn down. Excavated material would be either hauled off-site and spread on adjacent roads, spread in the uplands in the vicinity (and seeded with native, weed-free seed), or spread along the lakeshore. Woody debris would be placed in the created depressions to provide cover.

Results

Three shallow ponds were excavated in the fall of 2019 to provide breeding habitat for spadefoot toads. Excavation of these depressions was completed in early November. All of the ponds are located on the north shore of the Madison Arm of Hebgen Lake. Due to permitting issues, a skid steer could not be used to excavate the ponds. A large excavator was used to do the excavation, so the finished product was not as clean as previous toad habitat ponds that were created. The ponds measure approximately 40'x20', 30'x30' and 30'x20'. Depth of the created ponds will be dependent on the depth of Hebgen Lake; at full pool, the ponds will be between 0.5' and 2.5' in depth. Dead woody material was placed in two of the ponds; material will be placed in the third pond in the spring.

Funding

Funding for this project in 2019 was as follows:

Category	Funding Source		Total
	NWE	USFS	
Direct Labor – Equipment and Personnel	\$5,000	\$4,000	\$9,000
Materials and Supplies - Seed	\$0	\$150	\$150
Other Direct Expenses - Vehicle	\$0	\$0	\$0
Total	\$5,000	\$4,150	\$9,150

Future Activities

Forest personnel will monitor the ponds in the spring and summer of 2020 to determine whether goals (depth, profile, cover, etc.) were achieved. While exposed mineral soil was seeded this fall, additional seeding will occur in the spring of 2020. Additional downed woody material may be placed in the ponds once they are assessed following high water.

Photos













