

August 3, 2007

***Deep Creek Watershed Sensitive Species Assessment:
Conservation Partnership Initiative (CPI) grant to the
Great Salt Lake RC&D Council***

In 2004, the Great Salt Lake RC&D Council was awarded \$150,533 through the Natural Resources Conservation Service's (NRCS) Conservation Partnership Initiative to collect data on at-risk fish and wildlife species within the Deep Creek Watershed of Utah and Nevada. This effort was undertaken in accordance with the Deep Creek Watershed Coordinated Resource Management Plan Objective 5 to "maintain and/or improve habitat for sensitive species within the watershed." The Great Salt Lake RC&D Council partnered with researchers from Brigham Young University, Utah State University, and the Utah Division of Wildlife Resources to fill data gaps on these species in order to improve land management decision-making. Baseline population and habitat surveys were conducted by these partners to determine existing distribution, abundance, and habitat conditions for Columbia Spotted Frog (*Rana luteiventris*), Greater Sage-grouse (*Centrocercus urophasianus*), Pygmy Rabbit (*Brachylagus idahoensis*), and Least Chub (*Lotichthys phlegethontis*). It is expected that best management practices will be adopted to protect the habitat needs of these species and therefore reduce the likelihood of listing under the Endangered Species Act.

Summary of Findings:

Pygmy Rabbit

A predictive map depicting suitable Pygmy Rabbit habitat within the Deep Creek Watershed was developed to guide search efforts to locate extant populations. Intensive ground sampling was conducted in areas deemed suitable habitat on the predictive map. Researchers walked transects looking for Pygmy Rabbit burrows and fecal pellets to determine presence or absence.

Burrow densities in several areas of predicted suitable habitat within the watershed are very high. Remote cameras were placed near burrows to verify rabbit occurrence. Pygmy Rabbits were first documented in late fall of 2005 when a single individual was photographed southwest of Ibapah. Subsequent discoveries of Pygmy Rabbits in two additional areas occurred during 2006. In addition to these active areas, the researchers found three areas with extensive burrowing activity where they never confirmed rabbit presence with photographs. It is believed that these inactive sites are suitable and will be occupied again. In all, three active and three inactive Pygmy Rabbit sites were documented. The distribution and abundance of Pygmy Rabbits within the watershed overall was found to be reduced and very low.

Pygmy rabbits appear to utilize habitat based on predator avoidance and forage considerations as occupied habitat was found to include taller and denser stands of sagebrush. Damage to this structure could have negative impacts for Pygmy Rabbits.

Because Pygmy Rabbits rely on sagebrush for cover and food, this shrub is critical to their preservation. Sagebrush within the watershed—and hence Pygmy Rabbits—are threatened by the increase in greasewood, pinyon-juniper encroachment, and increased fire cycles due to cheatgrass.

Columbia Spotted Frog

The Ibapah Valley contains a large population of Spotted Frogs found throughout the valley. Two monitoring sites were established in 1997 to represent different habitat types in the valley. The south monitoring site is typified by natural spring sources while the north monitoring site is pastureland that is artificially flooded. Both have reflected changes in the spotted frog population over the past eight years. In order to better understand the distribution of spotted frogs in the Ibapah Valley, a sweep survey was conducted throughout the valley during April 2005.

Sweep surveys were conducted by traversing the perimeter of ponds and other wetlands while looking for amphibians and egg masses. If frogs, tadpoles, or egg masses were observed, their locations were recorded using a handheld GPS unit. Sweep surveys are generally conducted in areas surrounding or connected to currently occupied sites, as well as areas that were historically occupied by the Spotted Frog. A total of 39 egg mass deposition sites were located, which contained a total of 422 egg masses.

During the sweep survey, a healthy population of Spotted Frog was located approximately two kilometers north of the north monitoring site. Spotted Frog habitat in this location is adjacent to and receives perennial flow from Deep Creek. This site would likely provide a more accurate indicator of the health of the Spotted Frog population in the northern portion of the Ibapah Valley than that provided by the current north monitoring site. Efforts will be made to establish this new location as a monitoring site.

Least Chub

Surveys for least chub were conducted using minnow traps set in areas of potentially suitable habitat. No least chub were captured and consultation with long-time residents and past biologists has raised some doubt that least chub ever occupied the Ibapah Valley. The Least Chub Conservation Team has discussed the possibility of establishing a population of Least Chub in the Ibapah Valley, however, with no evidence of the species ever occupying the area it is recommended that efforts to establish a population be abandoned.

Greater Sage-grouse

Researchers radio-collared and monitored a total of 49 Greater Sage-grouse between March 2005 and February 2007. Two distinct Sage-grouse populations, the Sheeprock and the Deep Creek Watershed populations, were documented occupying the West Desert of Tooele and Juab counties. The two populations are geographically separated by the Great Salt Lake Desert. Radio-collared birds were tracked to describe seasonal habitat

use patterns and relationships to vegetation, lekking areas, reproductive chronology, productivity, and population dynamics, and to provide a better estimate of the populations.

Researchers identified 6 new leks, and confirmed that 2 historic leks, previously thought inactive, were being used. Personnel counted 283 strutting males in 2006 and estimated the 2 populations together consisted of 1,132 individuals. Experts contribute this historic high to counting leks during peak male attendance and finding new strutting areas. Most female grouse in both populations were found nesting within 3.2 km of a lek. The Deep Creek Watershed population is a non-migratory population, and most grouse activity is near leks. The Sheeprock Watershed population is a 1-stage migratory population where birds use the mountains for breeding, nesting, and brood-rearing and then migrate to lower elevations during winter.

Nesting success was higher in 2005 than 2006. Brood success was similar for the two years. The ratios of chicks per successful brood were higher in 2005 than 2006, for both sites. Ants (Formicidae) were the most abundant arthropod available to Sage-grouse within the Sheeprock Watershed. Researchers attribute these differences to precipitation. The spring of 2005 had twice the 30-year average spring precipitation, coming after a 5-year drought. However, there were no differences in vegetation at brood and random sites between years for either population. Chick recruitment in both populations was lower than reported in the literature. Sage-grouse survival rates for the Sheeprock and Deep Creek Watershed populations are lower and higher, respectively, than most published reports. Sage-grouse conservation strategies in both areas should emphasize enhancing existing brood-rearing habitat and protecting critical seasonal winter habitat.

General Recommendations and Best Management Practices:

The research conducted under this CPI grant has improved our understanding of how these four sensitive species use the Deep Creek Watershed. This data will now be used to protect these species and their habitats. Some general recommendations are presented below. NRCS personnel will continue to work with cooperators in the watershed to identify specific areas to be protected, restored, or enhanced. It is recommended that habitat projects be coordinated with Utah Partners for Conservation and Development in the Central Region.

Greater Sage-grouse

- Continue annual efforts to locate active lek sites in the watershed and monitor existing leks.
- Where appropriate, conduct mosaic treatments in known brood rearing habitats to enhance edge effects in accordance with NRCS Brush Management (314) practice standard for wildlife in sagebrush ecosystems.
- Seeding prescriptions should encourage a diverse mix of plant species adapted to the site, with a heavy emphasis on forbs.

- Implement wildfire control techniques, such as green stripping, to protect known critical habitat.
- Intensive rehabilitation should be undertaken immediately following wildfire to establish desirable vegetation.
- All brush management should be done outside primary strutting, nesting, and brood-rearing season (approximately March - August).
- Land management decisions within 3.2 kilometers of lek sites should be sensitive to the needs of the Sage-grouse because these areas receive heavy grouse use.
- Juniper that has encroached on sagebrush sites should be removed using techniques that minimize damage to existing sagebrush (e.g., lop-and-scatter).
- Water sources, such as seeps and trough overflows, are important and should be maintained and enhanced. Any improvements that result in lost water sources should be mitigated on site to retain some water for wildlife.

Columbia Spotted Frog

- Modify grazing systems on irrigated pasture to reduce impacts during the early spring to help increase tadpole survival and recruitment.
- Fence cattle from critical spotted frog areas.
- Establish conservation easements to protect Columbia Spotted Frog habitat where possible.
- When converting from flood irrigation to sprinklers, mitigate for artificial wetlands loss on-site.

Pygmy Rabbit

- Work with BLM and allottee to fence Greasewood Springs to decrease impacts from livestock and wildlife watering.
- Establish conservation easements on private lands to protect critical habitat where possible.
- Preserve areas surrounding known and relic habitat locations.
- Use predictive map to consider likely habitat in land management decisions.
- Avoid brush management in and around Greasewood Springs, the area east of Little Cemetery Road, and relict areas where burrows were documented.
- Inventory proposed treatment areas for sign of Pygmy Rabbits and avoid brush management where Pygmy Rabbit sign is found. Proposed treatments should be done in mosaic that leaves areas of dense sagebrush interconnected with corridors of sagebrush.
- Consider habitat restoration of riparian areas within the watershed.
- Consider additional surveys to assess Pygmy Rabbit biology and ecology in the watershed, as well as, translocations from more robust populations.