

Great Basin Spadefoot - *Spea intermontana*

Abundance: Unknown

Status: NSSU

NatureServe: G5 S3

Population Status: Restricted distribution, population numbers and threats are unknown.

Limiting Factor: Habitat - requires water for breeding and loose soils.

Comment: Changed from NSS4 in 2005 due solely to changes in the matrix.

Introduction

In Wyoming, the Great Basin Spadefoot's distribution includes most of Sweetwater County (including the Great Divide Basin) and parts of Fremont, Natrona, Lincoln, and Sublette Counties (Baxter and Stone 1985).

Spadefoot toads are insectivorous and active primarily at night. As an adaptation to arid conditions, they live in underground burrows for most of the year, emerging only to breed or forage. They dig their own burrows or use those of small mammals. The Great Basin Spadefoot has a short "explosive" breeding season, depending on the availability of temporary and permanent water sources. In Wyoming, this season typically can be from April to July when water is available and temperatures are warm. During the breeding season, males produce mating calls that can carry at least 1.5km on quiet nights. Breeding aggregations are usually brief and may be triggered by rainfall (Stebbins 2003). The female deposits about 300 to 500 eggs in small packets of 20 to 40 eggs each (Morey 2005). Eggs probably hatch in 2 to 7 or more days. Tadpoles metamorphose in 36 to 60 days (Morey and Reznick 2004). The distance adults may travel from underground burrows to breeding sites is unknown, though they can at least travel several hundred meters.

Habitat

The Great Basin Spadefoot is a xeric-adapted amphibian. It lives in sagebrush flats and semidesert shrublands in Wyoming. It requires loose, sandy soil for burrowing and may make its own burrow or use pre-existing rodent burrows (Stebbins 2003). Great Basin Spadefoots also require permanent or temporary water sources for breeding (e.g., playas, springs, seeps, ponds, reservoirs, riverine areas, roadside puddles, irrigation ditches, rain pools, flooded fields). Breeding sites (water sources) may be variable and differ each year, depending on water levels and precipitation. Successful breeding usually occurs in wetlands or areas in wetlands that do not contain predatory fish.

Problems

- h Population status, distribution, habitat data, and disease status are lacking for this species.
- h Alteration of aquatic habitats needed for breeding may adversely affect populations.
- h Alteration of terrestrial hibernating, foraging, and dispersal areas may adversely affect populations.
- h Environmental pollutants (pesticides, herbicides, fertilizers, and other toxins) may adversely affect populations.
- h Habitat fragmentation from roads may hinder movements (Buseck et al. 2005).
- h Development could compact soils and limit burrowing.

Conservation Actions

- h A systematic study of this species should be conducted with respect to distribution, abundance, habitat associations, and disease status within Wyoming.
- h Develop management recommendations based on survey data.
- h Continue efforts to educate landowners and the public about the importance of amphibians.

Monitoring/Research

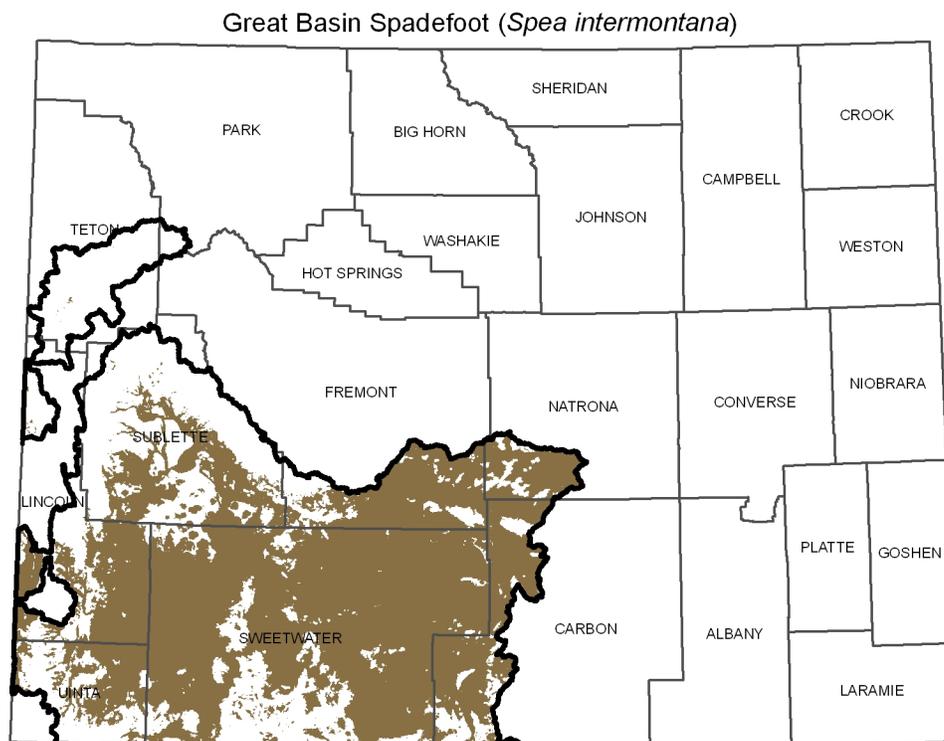
Survey and monitor population distribution, status, and habitat associations within the Great Basin Spadefoot range in Wyoming.

Recent Developments

Surveys for Great Basin Spadefoots and their associated habitats were conducted during the summer of 2009 in southwest Wyoming. Amphibians have received increased attention within Wyoming. Incidental observations are encouraged to be reported to the herpetology program.

References

- Baxter, G.T. and M.D. Stone. 1985. Amphibians and Reptiles of Wyoming. Second Edition. Wyoming Game and Fish Department, Cheyenne. 137pp.
- Stebbins, R.C. 2003. A Field Guide to Western Reptiles and Amphibians. Third Edition. Houghton Mifflin Company, Boston. 533pp.
- Buseck, R.S., D.A. Keinath, and M. Geraud. 2005. Species Assessment for Great Basin Spadefoot (*Spea intermontana*) in Wyoming. Wyoming Natural Diversity Database, University of Wyoming, Laramie, Wyoming. 57pp.
- Morey, S.R. 2005. *Spea intermontana* (Cope, 1883) Great Basin Spadefoot. Pages 517-519 in M.J. Lannoo (ed), Amphibian Declines: The Conservation Status of United States Species. University of California Press, Berkeley, CA.
- Morey, S.R. and D.N. Reznick. 2004. The relationship between habitat permanence and larval development in California spadefoot toads: field and laboratory comparisons of developmental plasticity. *Oikos* 104:172-190.



SOURCE: Digital maps of ranges and predicted distributions for Wyoming Species of Greatest Conservation Need: April 2010. Wyoming Natural Diversity Database. University of Wyoming, Laramie, Wyoming. Note that brown indicates the predicted distribution of the species; heavy black lines indicate outermost boundaries of possible occurrence.