

Great Basin Spadefoot - *Spea intermontana*

Abundance: Abundant

Status: NSS4 (Bc)

NatureServe: G5 S3

Population Status: Restricted distribution, population numbers appear abundant in places. Threats are moderate, but may be increasing across the landscape.

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

Comment: Changed from NSSU to NSS4(Bc) due to what we have learned about the species over the past 6 years.

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 in 2009 and 2010 in southwest Wyoming (Snoberger and Walker 2012). During these surveys, 50 previously unknown populations of Great Basin Spadefoots were documented, almost doubling the number of known populations in the state. The known range of the species was updated as a result of these observations (Snoberger and Walker 2012). Genetic samples for both Great Basin Spadefoots and Plains Spadefoots have been collected across the state since 2011 in order to determine if these species' ranges overlap or if these species interbreed. 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.

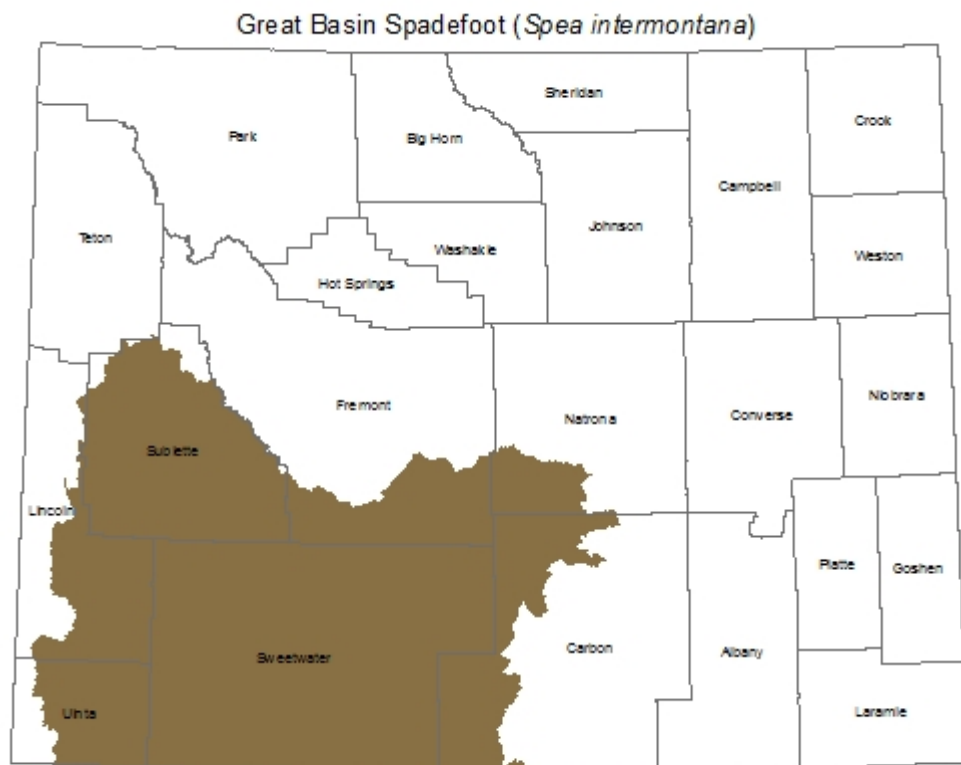
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Buseck, R.S., D.A. Keinath, and M. Geraud. 2005. Species Assessment for Great Basin Spadefoot (*Spea intermontana*) in Wyoming. Wyoming Natural Diversity Database, University of Wyoming, Laramie, Wyoming. 57pp.

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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.

Snoberger, C.E. and Z.J. Walker. 2012. Great Basin Spadefoot surveys in southwest Wyoming 2009-2010. Wyoming Game and Fish Administrative Report. Cheyenne, Wyoming.



SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: February 2016. Wyoming Game and Fish Department. Note that brown indicates the current known range of the species.