Boreal Toad - Anaxyrus boreas boreas

Abundance: Extremely rare

Status: NSS1 (Aa) NatureServe: G4T4 S1

Population Status: Imperiled dut to greatly restricted numbers, extirpation is possible

Limiting Factor: Disease: chytrid fungus (Batrachochytrium dendrobatidi) is thought to be the reason for recent mass die-offs.

Comment: The genus of the species was changed from Bufo. Formerly Bufo boreas boreas.

Introduction

The Boreal Toad is thought to have two distinctive population segments in Wyoming, a northern Rocky Mountain population and a southern Rocky Mountain population. The northern population is located in the western part of the state (Fremont, Hot Springs, Lincoln, Park, Sublette, and Uinta Counties, including Yellowstone National Park). The southern population is located in the southeastern portion of the state (Albany, Carbon and Laramie Counties). Although chytrid fungus is of concern throughout both population segments, southern populations are of increased concern. Mass die-offs have been attributed to chytrid fungus within the Laramie, Medicine Bow, and Sierra Madre Mountain ranges. The Southern Rocky Mountain population segment is considered a candidate species for the Endangered Species Act due to geographic isolation and disease concerns (Keinath and McGee 2005). Boreal Toads typically emerge shortly after snow melt, and are often diurnally found in association with water. However, this species often nocturnally visits more terrestrial habitats to forage (Baxter and Stone 1985). Boreal Toads feed primarily on ants, beetles, moths, and other invertebrates. Breeding can occur from April to early August depending on climatic conditions and elevation. On average, 5,200 eggs are deposited in double-rowed strings in shallow water. Egg incubation and development times are temperature dependent and may take as long as 92 and 45 days respectively. Due to long incubation times, some tadpoles may not metamorphose before winter (typically over 10,500 feet in elevation). It is not thought that tadpoles are able to overwinter in Wyoming (Baxter and Stone 1985).

Habitat

In Wyoming, the Boreal Toad inhabits wet areas in foothills, montane, and subalpine zones from 6,500 to 11,500 feet in elevation (Baxter and Stone 1985).

Problems

- Boreal Toad populations appear to be in a state of severe decline. Factors that may contribute to perceived declines include habitat alteration, pollutants, climatic changes, and pathogens. However, at this time, chytrid fungus is considered to be the major contributing factor. In the southern Rocky Mountain population segment, this fungus has been linked to recent mass die-offs.

Conservation Actions

- A systematic study of this species should be conducted with respect to distribution, abundance, habitat associations, and disease status within Wyoming.
- With populations in decline, additional research needs to focus on methods to retain existing populations. Data from this research is required to create management strategys for recovery.
- The basic biology and transmission of Batrachochytrium dendrobatidis (chytrid) needs to be studied

Monitoring/Research

Monitoring should occur at known populations of Boreal Toad. Surveys should incorporate protocols to examine chytrid fungus prevalence. Studies should be conducted that examine possible habitat factors resulting in Boreal Toad decline, results should be incorporated into repatriation projects. Range wide surveys should be conducted to discover previously unknown populations of Boreal Toad.

Recent Developments

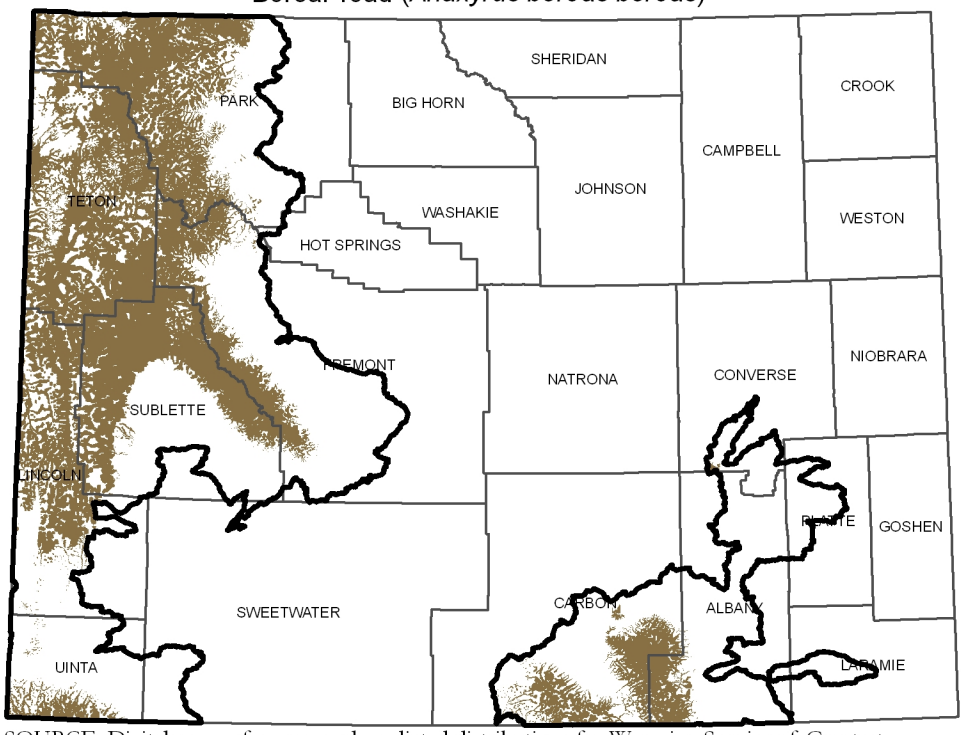
Annual monitoring of known populations has been performed in the Medicine Bow Mountains. Surveys were conducted within the Green River Watershed to verify populations of Boreal Toad after native fish restorations. Surveys were conducted in the Shoshone National Forest to verify Boreal Toad populations. Surveys were conducted to verify old observation records in the Medicine Bow, Laramie, and Sierra Madre Mountain ranges. Wyoming has participated with the Boreal Toad recovery program, which was initiated by the state of Colorado.

References

Baxter, G.T. and M.D. Stone. 1985. Amphibians and Reptiles of Wyoming. Second Edition. Wyoming Game and Fish Department, Cheyenne. 137pp.

Keinath, D.A. and M. McGee. 2005. Boreal Toad (Bufo boreas boreas) A Technical Conservation Assessment. Report prepared for USDA Forest Service, Rocky Mountain Region, Species Conservation Project by the Wyoming National Diversity Database-University of Wyoming, Laramie, WY.

Boreal Toad (*Anaxyrus boreas boreas*)



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.