Wyoming Toad - Anaxyrus baxteri

Abundance: Extremely rare

Status: NSS1 (Aa) NatureServe: G1 S1

Population Status: Imperiled due to greatly restricted numbers and distribution, extinction is possible. This species is federally listed as endangered.

Limiting Factor: Habitat: habitat modification, loss, and alterations in land use have resulted in severely restricted range.

Comment: Formerly Bufo baxteri.

Introduction

Wyoming Toads are currently restricted to Albany County, Wyoming. Historically, this species was observed in the floodplains of the Big and Little Laramie Rivers (Odum and Corn 2005). In the mid 1970's, Wyoming Toad populations experienced drastic declines. The exact cause of these declines is unknown, but possible causes include aerial spraying of pesticides, chytrid fungus, other diseases, and habitat alteration. Following this decline, the species was listed as federally endangered in 1984 (49 F.R. 1992, January 17, 1984) and was reported as possibly extinct in 1985. However, an isolated population of Wyoming Toad was discovered at Mortenson Lake in 1987. Today, this species is restricted in the wild to less than five sites in the Upper Laramie and Medicine Bow watersheds, including two Safe Harbor Agreement sites. Reproduction in the wild has only been documented at two sites since the species was listed. A captive breeding program has been implemented at ten institutions. Wild adults appear from hibernation when daytime temperatures reach approximately 70 degrees Fahrenheit (Baxter and Stone 1985). Breeding behavior typically occurs a week following emergence. Eggs are laid in shallow permanent waters. Egg masses contain 1,000 to 6,000 ova (Odum and Corn 2005). Wyoming Toad larvae typically transform by early August. Wyoming Toads feed upon beetles and other small invertebrates. Males are thought to reach sexual maturity at two years of age, while females are thought to reach maturity by three years.

Habitat

The Wyoming Toad lives in floodplains, ponds, and small seepage lakes in the mixed grass prairies (Baxter and Stone 1985, Geraud and Keinath 2004). Adults tend to restrict their habitat use to within 10m of the water (Odum and Corn 2005). Hibernating habitat for the Wyoming Toad is not well understood (Geraud and Keinath 2004).

Problems

- Wyoming Toads face a number of management issues. These include concerns for genetic health, disease, and habitat modification/destruction. Due to precipitous declines, retention of genetic diversity is an important issue. Current captive breeding programs are tasked to maximize genetic variation. Chytrid fungus is present in known populations of Wyoming Toad. This disease has been attributed to anuran decline. Habitat modification and anthropogenic factors such as irrigation, chemical application, and increased levels of human subsidized predators are factors that also may affect Wyoming Toad populations. Additionally, recovery efforts are hampered by low survivalship and lack of ideal recovery sites.

Conservation Actions

- Follow conservation actions as outlined in USFWS Wyoming Toad Recovery Plan.
- Perform research on how to better manage wild and captive populations.
- Expand and improve reintroduction success (i.e. adult survival, reproduction) at Safe Harbor sites.

Monitoring/Research

Continue annual monitoring of known and suspected populations of Wyoming Toad. Perform research on vitamin deficiency in captive populations of Wyoming Toad. Continue monitoring prevalence of chytrid fungus at known Wyoming Toad populations. Conduct research on hibernacula and survivalship of adult toads.

Recent Developments

The Wyoming Natural Diversity Database's (WYNDD's) developed protocol to standardize Wyoming Toad surveys. Sites with Wyoming Toads have been surveyed annually using this protocol since 2008 to determine the success of reintroduction efforts and to monitor population numbers. All adult Wyoming Toads are marked and tested for chytrid fungus. Water temperature monitoring was also initiated at known Wyoming Toad survey sites. Currently, the range of the Wyoming Toad is limited to Mortenson Lake and Porter Lake, where most of the reintroductions have taken place. Porter Lake is a Safe Harbor site.

In 2012, a study was conducted using soft releases for reintroduction of Wyoming Toads at Mortenson Lake. Tadpoles were protected using mesh cages and toadlets were protected using small corrals. Since the beginning of this study, the number of Wyoming Toads found at Mortenson Lake has greatly increased. There are currently over 600 Wyoming Toads at the ten Wyoming Toad breeding locations. Several of these facilities are improving and greatly increasing their output, with large expansions planned at two of the existing breeding facilities.

The Wyoming Toad Revised Recovery Plan was updated and finalized in 2015 (U.S. Fish and Wildlife Service 2015). The ultimate recovery objective in the this plan is to restore a minimum of 5 self-sustaining populations within and/or nearby the historical range, and subsequently to delist the Wyoming Toad. The USFWS is currently proposing to establish a Wyoming Toad Conservation Area that would expand the boundaries of the existing National Wildlife Refuges in the area (Bamforth, Mortenson Lake, and Hutton Lake). Under this proposal, the USFWS would work with private landowners to conserve Wyoming Toads by acquiring perpetual conservation easements and fee-title land purchases from willing sellers.

References

Geraud, M., and D. A. Keinath. 2004. Species Assessment for Wyoming Toad (Bufo Baxteri) in Wyoming. Report prepared for the Bureau of Land Management Wyoming State Office by the Wyoming Natural Diversity Database, University of Wyoming, Laramie, WY.

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U.S. Fish and Wildlife Service. 2002. Wyoming Toad Recovery Plan, Colorado. Region 6, Lakewood, Colorado. 56 pp.

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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.