

The Wyoming Toad SSP

by Brint Spencer



USFWS photo



Mortenson NWR
USFWS photo

The origin of the Wyoming toad can be traced to about 10,000 years ago when it became isolated from its ancestral stock, the Manitoba or Canadian toad (*Bufo hemiophrys*), around the end of the Pleistocene Epoch. The ranges of the two species are separated by approximately 500 miles (800 kilometers). The Wyoming toad currently is found only in the State's Laramie Basin. This burrowing animal inhabits floodplains, ponds, and ditches in the short grass regions of the basin.

Wyoming toads (*Bufo hemiophrys baxteri*) were once abundant in the wetlands and irrigated meadows of Wyoming's southeastern plains. However, by the 1970's the population had declined drastically and was confined to privately owned lands surrounding Mortenson Lake. In 1984, the Fish and Wildlife Service (FWS) recognized the species' precarious status by listing the Wyoming toad as endangered. To protect the last population, The Nature Conservancy (TNC) stepped in and purchased the lake and surrounding lands, totaling approximately 1,800 acres (730 hectares). But populations continued to decline, and by 1994 the species was extinct in the wild. Only captive populations remained.

In December of 1996, the American Zoo and Aquarium Association (AZA) approved a Species Survival Plan (SSP) that formalized a cooperative program of the AZA, FWS, and Wyoming Game and Fish Department (WGF). This program was designed to restore the Wyoming toad, one of the most endangered amphibians in the United States, to a secure status in the wild.

The reintroduction story began in 1988, when a small number of toads were taken from Mortenson Lake to WGF facilities for captive breeding. In 1992, the FWS purchased some of the Wyoming toad's last habitat from TNC and established the Mortenson National Wildlife Refuge (NWR). That same year, tadpoles and toadlets were released at Lake George and Rush Lake on Hutton NWR in an effort to establish a second wild population. By 1994, it was apparent that emergency measures were needed. In an effort to prevent the animal from becoming extinct, the last remaining toads were captured and a

more intensive captive breeding program was initiated. The captive population greatly increased by 1995, with the help of several AZA affiliated zoos and the WGF facilities.

Wyoming toads are now housed at eight AZA affiliated zoos: Central Park (NY), Cincinnati (OH), Detroit (MI), Henry Doorly (NE), Houston (TX), Sedgwick County (KS), St. Louis (MO), and Toledo (OH). Two government facilities, the Saratoga National Fish Hatchery (WY) and Sybille Wildlife Research Center (WY), also have captive populations. Diane Callaway of the Henry Doorly Zoo maintains a species studbook to manage the genetics of the entire captive breeding population. Nearly 600 toads now exist in captivity and there are over 3,000 historical records in the studbook. Each spring, a number of the offspring produced that year are held back for the captive breeding program. The rest are returned to Wyoming, where they are released as tadpoles or toadlets.

Since 1996, the program has produced approximately 10,000 toads for reintroduction into the Laramie basin. Most of the release efforts have focused on Mortenson Lake. Once a viable population has been established there, we will concentrate on other lakes in the area. So far, only a small number of toads have survived to breed. By the spring of 1998, several two-year-old captive hatched and released animals were heard calling at Mortenson Lake. The calls indicated breeding activity in native habitat for the first time since the Wyoming toad was declared extinct in the wild.



The AZA has also been involved in several research projects on the Wyoming toad. A radiotelemetry field study was funded by the AZA Conservation Endowment Fund (CEF) and a Challenge Cost Share Agreement from the FWS was initiated last year to look at microhabitat use. In addition, the Center for the Reproduction of Endangered Wildlife at the Cincinnati Zoo received a CEF grant to study the feasibility of cryopreserving toad sperm. Further, the Nutrition Department of the Wildlife Conservation Society is researching the diets of Wyoming toads living in captivity and in the wild.

Future goals for the recovery effort include increasing the public's awareness of the Wyoming toad's critical status, expansion of the captive breeding program, and additional research. An outreach coordinator has been identified to initiate education programs to reach adults and students in local schools. Two additional AZA zoos have

expressed interest in participating in the captive breeding program. Upcoming research projects will include studies on the effects of temperature and the duration of hibernation, field work to identify toad hibernation sites, and a genetic analysis of captive versus wild bred populations.

Each facet of the Wyoming Toad SSP and recovery program is an integral part in our plan to restore this endangered amphibian to a secure status. With continuing cooperation among AZA institutions, the FWS, and WGF, this effort is achieving promising results. It is an excellent example of how dedicated biologists and resource managers can work together to save a critically endangered species.

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The Wyoming toad is dark brown, gray, or greenish in color with small dark blotches. Adult Wyoming toads average 2.2 inches (55 millimeters) in length, with the females slightly larger than the males.

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