

## DEPARTMENT OF THE INTERIOR

## Fish and Wildlife Service

## 50 CFR Part 17

**Endangered and Threatened Wildlife and Plants; Determination That *Bufo hemiophrys baxteri* (Wyoming Toad) is an Endangered Species**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** The Service determines *Bufo hemiophrys baxteri* (Wyoming toad) to be an endangered species. This toad is now known to occur only in one 40-acre area of privately-owned land in Albany County, Wyoming. Formerly abundant in the Laramie Basin, the toad has virtually disappeared from all known sites; only two immature specimens were located in a 1983 survey. The cause of its precipitous decline is uncertain. The Service requested information on the species in a proposed rule that appeared in the *Federal Register* on January 27, 1983 (48 FR 3794). The determination that *Bufo hemiophrys baxteri* is endangered will implement Federal protection provided by the Endangered Species Act of 1973, as amended.

**DATES:** This rule becomes effective February 18, 1984.

**ADDRESSES:** Comments or questions concerning this action should be sent to the Regional Director, U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225.

**FOR FURTHER INFORMATION CONTACT:** Dr. James L. Miller, Staff Biologist, Endangered Species Office, U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 (303/234-2496).

**SUPPLEMENTARY INFORMATION:****Background**

*Bufo hemiophrys baxteri* (Wyoming toad) was discovered by Dr. George T. Baxter in 1946 (Porter, 1968). A related toad, *Bufo hemiophrys hemiophrys* (Canadian toad), occurs in Manitoba, Alberta, Saskatchewan, Minnesota, Montana, and North and South Dakota. The Wyoming toad is thought to be a relictual population left behind as glaciers retreated. Some authors (Packard, 1971) have argued that the Wyoming toad is a full species, but Porter (1968) presented evidence that it is subspecifically distinct from *Bufo hemiophrys hemiophrys* (but see comments of J. D. Stewart cited below). The toad is small (2-inch) bufonid with cranial crests fused into a medial

"boss." It is the only toad in the Laramie Basin. Since its discovery, Dr. George Baxter has taken students in summer from the University of Wyoming to observe the Wyoming toad. Known breeding places were visited regularly for over 30 years. After very few toads were heard or seen from 1975 through 1979, an intensive survey was conducted throughout the Laramie Basin in 1980. A reward for information on the toad was advertised in local newspapers and resulted in one population being located on private land in Albany County, Wyoming. A number of males were heard calling, but no females were found nor were any tadpoles or egg masses discovered when the area was checked later. The population existed within a 40-acre area and was thought to consist of about 25 individuals; surveys in 1981 revealed only one male and one female. A survey conducted by the State of Wyoming was able to again locate only two toads in this area in 1983. The reasons for the basinwide disappearance are not understood although the leopard frog (*Rana pipiens*) was also found to be suddenly absent from the Laramie Basin. However, the northern chorus frog (*Pseudacris triseriata*) remains abundant in the Laramie Basin. Baxter *et al.* (1982) reviewed the biological status of the species and speculated on possible reasons for decline.

**Summary of Comments and Recommendations**

In the January 27, 1983, *Federal Register* proposed rule (48 FR 3794) and associated notifications and press releases, all interested parties were requested to submit factual reports or information which might contribute to the development of a final rule. A letter was sent to the Governor of Wyoming notifying him of the proposed rule and soliciting his comments and suggestions. All comments received were considered.

Comments were received from the Wyoming Executive Department, the Wyoming Game and Fish Department, the Colorado Field Office of The Nature Conservancy, Mr. J. D. Stewart of the University of Kansas Museum of Natural History and Dr. George T. Baxter of the University of Wyoming. All comments supported the proposal for listing this species.

The Wyoming Executive Department suggested that any recovery strategy must recognize and protect the private-landowner interests in the affected area and if a viable population is discovered on private lands in the Laramie Basin, it should be relocated to areas of Federal lands where it can receive adequate protection. The Service agrees that any

recovery strategy must recognize private landowner rights; only by cooperation may the survival of this unique toad be ensured. However, removal of a viable population from an area solely because it occurs on private land is not biologically justified and may contribute further to the species' precarious status. The Service will carefully consider all viable options to ensure the survival of the toad during the development of a recovery plan and will work closely with private landowners both to protect the unique Wyoming toad and cause minimum disturbance to the lifestyle of Laramie Basin residents.

The Wyoming Game and Fish Department was concerned that viable populations of this species may no longer exist. It conducted a survey in 1983, in conjunction with the University of Wyoming and the U.S. Fish and Wildlife Service, that located only two immature individuals on the same private property in Albany County where a number of calling males had been heard in 1980.

Dr. Mark R. Stromberg of The Nature Conservancy indicated in his response that limited field observations for the toad were conducted in 1982; however, no populations were found at that time.

Mr. J. D. Stewart of the University of Kansas Museum of Natural History indicated that in 1981 and 1982, he collected numerous fossil toad elements from a site in northwestern Kansas that has produced a boreal fauna including many taxa now restricted to the Rocky Mountains. Subsequent study of these elements showed them to belong to the Wyoming toad. Although there is no published information on how to distinguish the bones of *Bufo hemiophrys hemiophrys* from those of *Bufo hemiophrys baxteri*, Stewart has found that the skulls are easily differentiated. His analysis further indicated that the osteological differences between the two "subspecies" exceeds the degree of difference between some recognized species of *Bufo*.

Dr. George T. Baxter of the University of Wyoming commented that this toad is "surely endangered." During 1982, Dr. Baxter surveyed the 40-acre privately-owned area where a number of calling males had been heard in 1980. His search yielded no calls or toads.

No public meeting was requested on the proposed listing, nor were any unfavorable comments received.

**Summary of Factors Affecting the Species**

After a thorough review and consideration of all available

information, the Service has determined that *Bufo hemiophrys baxteri* (Wyoming toad) is an endangered species due to one or more of the factors described in Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*). The Service has determined that *Bufo hemiophrys baxteri* is primarily affected by factors A, C, and D.

All five factors and their application to the Wyoming toad are as follows:

**A. The present or threatened destruction, modification, or curtailment of its habitat or range.** Historic ranching practices involved flooding the plains adjacent to the Little Laramie River. Changes in irrigation practices due to current increased demand for irrigation water may have resulted in the drying out of former habitats before tadpole development was complete. The specific use and timing of irrigation waters is largely left up to landowners. Local irrigation districts control regional water use. Research is needed on the changes in irrigation practices since 1970 to determine if they may have contributed to the decline.

Drainage of habitat for non-irrigation uses may have contributed to the decline of the toad.

The use of the herbicide Atrazene is known to decimate *Bufo* populations (Beebe, 1973) and it can be introduced into watersheds in sufficient levels to kill *Bufo* eggs or tadpoles. Atrazene is widely available throughout the Laramie Basin. Other herbicides, such as Tordon, are more commonly used than Atrazene, but the effects of these chemicals on amphibians are largely unknown. Herbicides are often used by the Weed and Pest Districts, Wyoming Department of Agriculture, for "noxious" weed control in roadside ponds and along field edges typically used by the Wyoming toad. Basinwide aerial application of Baytex (Fenthion) with diesel fuel began in 1975. This mosquito control technique, applied with little control on drift of the spray, may be highly toxic to bufonids. Some evidence indicates that diesel fuel alone is toxic to amphibians. More research is needed on this topic.

**B. Overutilization for commercial, recreational, scientific, or educational purposes.** Not applicable for this species.

**C. Disease or predation.** Disease in *Bufo hemiophrys baxteri* has not been studied. However, the extremely small population exists in a limited area and a disease outbreak could be catastrophic. Predation may be a major factor in the decline of the Wyoming toad. The California gull (*Larus californicus*) population has increased greatly in recent years. Local ranchers report that

field are literally white with gulls in early spring. Raccoons, foxes, and skunks have all shown population increases. These factors combined could pose a serious threat to the Wyoming toad.

**D. The inadequacy of existing regulatory mechanisms.** The use of herbicides and other chemicals in Wyoming is regulated with regard to effects on fish, but not on amphibians. In fact, bioassay data are lacking on the effects that widely applied chemicals have on amphibians. The apparent inadequacy of the regulations may be due to the lack of recognition of a problem with amphibians.

**E. Other natural or manmade factors affecting its continued existence.** None are known.

#### Critical Habitat

The Act (Section 3; 50 CFR Part 424) defines "critical habitat" to include (i) specific areas within the geographical area occupied by the species at the time it is listed which are essential to the conservation of the species, and which may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species.

Critical Habitat is not being determined for *Bufo hemiophrys baxteri* since only two immature individuals were located during field surveys in 1983. Indeed, prior to this year, the Wyoming toad was last reported in 1981 from two individuals located in the Laramie Basin; surveys in 1982 did not reveal any toads. The Service therefore believes that critical habitat is not determinable. The Service notes, however, that not all of the potential habitat in the Laramie Basin has yet been surveyed. Should future surveys discover significant breeding populations, these areas could then be considered as critical habitat.

The Wyoming toad is considered an extremely rare amphibian. The publication of the exact area where the toads last bred could lead to jeopardy to any remaining individuals through collection. The best available biological data indicate that, due to apparent low population size, removal of any individuals from the population other than for purposes directly related to conservation could be detrimental to the species' survival.

#### Available Conservation Measures

The Act and its implementing regulations published in the June 24, 1977, *Federal Register* (42 FR 32373-

23281; presently under revision to comply with recent amendments) set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These regulations are found at § 17.21 of 50 CFR and are summarized below.

With respect to the Wyoming toad, all prohibitions of Section 9(a)(1) of the Act, as implemented by § 17.21, now apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take, import or export, ship in interstate commerce in the course of a commercial activity, or sell or offer for sale this species in interstate or foreign commerce. When this rule becomes effective, it will also be illegal to possess, sell, deliver, carry, transport, or ship any such wildlife which was illegally taken. Certain exceptions apply to agent of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, the enhancement of propagation or survival of the species, and economic hardship. Section 10(a)(1)(B) of the Act also authorizes permits for the taking of endangered species incidental to otherwise lawful activities.

Section 7 of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is listed as endangered or threatened. Section 7(a)(2) requires Federal agencies to ensure, in consultation with the Service, that activities they authorize, fund, or carry out, are not likely to jeopardize the continued existence of the Wyoming toad. Provisions for interagency cooperation are codified at 50 CFR Part 402. Proposed revised regulations to implement the 1982 amendments to Section 7 have recently been published (June 29, 1983; 48 FR 29989-30004).

#### National Environmental Policy Act

In accordance with a recommendation from the Council on Environmental Quality (CEQ), the Service has not prepared any NEPA documentation for this rule. The recommendation from CEQ was based, in part, upon a decision in the Sixth Circuit Court of Appeals which held that the preparation of NEPA documentation was not required as a matter of law for listings under the Endangered Species Act. *PLF v. Andrus* 657 F.2d 829 (6th Cir. 1981).

**Authors**

The primary author of this rule is Dr. James L. Miller, Region 6 Endangered Species Office, Denver, Colorado (303/234-2496), Dr. C. Kenneth Dodd, Jr. and Mr. John L. Paradiso, Office of Endangered Species, Washington, D.C., served as editors.

**References Consulted or Cited**

Baxter, G. T., and M. Stone. 1980. Amphibians and reptiles of Wyoming. Wyoming Game and Fish Department Bulletin, Laramie, WY. 137 pp.

Baxter, G. T., and M. Stromberg. 1980. Status Report. Rep. to U.S. Fish and Wildlife Service, Denver, Colorado, U.S.A. 5 pp. (mimeogr.)

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Packard, G. C. 1971. Inconsistency in application of the biological species concept to disjunct populations of anurans in southeastern Wyoming and northcentral Colorado. J. Herpetol. 5:191-193.

Porter, K. P. 1968. Evolutionary status of a relict population of *Bufo hemiophrys* Cope. Evolution 22:583-594.

Sanders, H. O. 1970. Pesticide toxicities to tadpoles of the western chorus frog, *Pseudacris triseriata*, and Fowler's toad, *Bufo woodhousei fowleri*. Copeia 1970:246-251.

Stromberg, M. R. 1981. Wyoming Toad (*Bufo hemiophrys baxteri*) endangered. J. Colo.-Wyo. Acad. Sci. 13(1):47.

Vankirk, E. A. 1980. Report on Population of *Bufo hemiophrys* on Laramie Plain, Albany County, Wyoming. Rep. to Wyoming Natural Heritage Program, The Nature Conservancy, Cheyenne, Wyoming, U.S.A. 6 pp. (mimeogr.)

**List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Fish, Marine mammals, and Plants (agriculture).

**Regulation Promulgation**

**PART 17—[AMENDED]**

Accordingly, Part 17, Subpart B of Chapter I, Title 50 of the U.S. Code of Federal Regulations, is amended as set forth below:

1. The authority citation for Part 17 reads as follows:

**Authority:** Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. Section 17.11(h) is amended by adding, in alphabetical order, the following to the List of Endangered and Threatened Wildlife under "Amphibians."

**§ 17.11 Endangered and threatened wildlife.**

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
Toad, Wyoming	<i>Bufo hemiophrys baxteri</i>	U.S.A. (WY)	Entire	E	198	NA	NA

Dated: December 20, 1983.

**J. Craig Potter,**  
Acting Assistant Secretary for Fish and Wildlife and Parks.

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