

Dated: September 23, 1994.

Arthur E. Ronkovich,
Acting Associate Administrator, Office of
Acquisition Policy.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB66

246-94

Endangered and Threatened Wildlife and Plants; Threatened Status for the Goliath Frog

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines threatened status for the goliath frog of Central Africa. This huge amphibian is narrowly distributed and is vulnerable to commercial collection for export and to other problems. This rule implements the protection of the Endangered Species Act of 1973, as amended, for this species. Permits will be available for scientific purposes, to enhance propagation or survival, and for zoological exhibition.

EFFECTIVE DATE: January 9, 1995.

ADDRESSES: The complete file for this rule is available for public inspection, by appointment, from 8:00 a.m. to 4:00 p.m., Monday through Friday, in Room 750, 4401 Fairfax Drive, Arlington, Virginia 22203. Express and messenger-delivered mail should be sent to the Office of Scientific Authority at this same address.

FOR FURTHER INFORMATION CONTACT: Dr. Charles W. Dane, Chief, Office of Scientific Authority; Mail Stop: Arlington Square, Room 725; U.S. Fish and Wildlife Service; Washington, D.C. 20240 (phone 703-358-1708; FAX 703-358-2276).

SUPPLEMENTARY INFORMATION:

Background

Recent investigations have suggested an alarming worldwide decline in populations of frogs and other amphibians (Johnson 1994; Rabb 1990). Because of their generally complex life cycles, with aquatic larval and terrestrial adult stages, their low and high status in community food chains, and their permeable skin, amphibians constitute a group particularly sensitive to environmental disturbances. The precise causes of the decline are not well understood, but indicated factors

in various cases include forest destruction, habitat fragmentation, overhunting, acid rain, metallic pollution, pesticides, and soil drying. Problems with frogs and other amphibians have been observed in such diverse places as Western Canada, South Carolina, Guatemala, Ecuador, Puerto Rico, Borneo, and Australia.

The U.S. Fish and Wildlife Service (Service) has received information that the largest frog in the world is among those in jeopardy. This species, the goliath frog (*Conraua goliath*) of Central Africa, reaches a recorded weight of up to 7.2 pounds (3.3 kilograms), a head and body length of 12.6 inches (320 millimeters), and a total length, including the hind leg and foot, of about 32 inches (813 millimeters); there have been reports of even larger individuals (Klass 1990; Sabater Pi 1985; Zahl 1967). This giant amphibian has a relatively small range. It occurs along major rivers in dense rainforest within an area of about 10,000 square miles (26,000 square kilometers) in Equatorial Guinea, Gabon, and southwestern Cameroon. In contrast, the common bullfrog (*Rana catesbiana*), which is about half the size, occurs all across eastern North America from Quebec to Mexico (Frost 1985; Sabater Pi 1985; Zahl 1967).

Previous Federal Action

In a petition dated April 9, 1991, the Service was requested to add the goliath frog to the List of Endangered and Threatened Wildlife. The petition was from: Dr. Christina M. Richards (Biology Department, Wayne State University, Detroit, Michigan 48202) and Dr. Victor H. Hutchison (Department of Zoology, University of Oklahoma, Norman, Oklahoma 73069). It was accompanied by extensive data on the biology of the goliath frog, and pointed out such problems as slow maturation, rarity, restricted distribution, habitat destruction, local hunting, international trade, high prices for living specimens, and poor adaptation to captivity.

Section 4(b)(3) of the Endangered Species Act of 1973, as amended in 1982 (Act), requires two findings with respect to a petition to list, delist, or reclassify a species. Within 90 days of receipt, a finding must be made on whether the petition presents substantial information indicating that the requested action may be warranted, and, within 12 months of receipt, a finding must be made as to whether the action is warranted, not warranted, or warranted but precluded by other listing activity.

The Service examined the data submitted by the petitioners and

consulted other authorities. It also learned that the goliath frog is classified as vulnerable by the World Conservation Union (IUCN). This review led the Service to make the findings that the petition did present substantial information and that the requested action was warranted. These findings were incorporated in a proposal to list the goliath frog as a threatened species, published in the **Federal Register** of September 12, 1991 (56 FR 46397-46400). The comment period on the proposal was reopened by notices in the **Federal Registers** of July 19, 1994 (59 FR 36737-36738), and October 25, 1994 (59 FR 53628-53629).

Summary of Comments and Recommendations

In the proposed rule of September 12, 1991, and associated notifications, all interested parties were requested to submit information that might contribute to development of a final rule. Cables were sent to United States embassies in countries within the range of the subject species, requesting new data and the comments of the governments of those countries. Of the 12 responses received on the original proposal, 7 indicated support for classification of the goliath frog as threatened, 2 indicated opposition, and 3 did not clearly express an opinion in that regard. Several of the respondents provided new information, some of which has been incorporated into this document. Specific substantive points made in opposition to listing, or to other aspects of the proposal, are discussed below.

Point 1.—Listing will bring about unnecessary restrictions and paperwork, thereby interfering with legitimate importation and research, and thus preventing efforts to propagate and maintain the goliath frog in captivity. **Service response.**—The Act requires the Service to list species that may be endangered or threatened, based on the best scientific and commercial data available, regardless of any inconvenience that may be caused by such listing. The Act provides for the issuance of permits to conduct otherwise prohibited activities for the purposes of scientific research, enhancement of propagation and survival of the species, and zoological exhibition. The Service will make every effort to expedite the processing of permit applications.

Point 2.—The distribution of the goliath frog is poorly known and may extend over a considerably larger area than given in the proposal. **Service response.**—Based on the species' habitat requirements, it is possible that the

range of the frog is larger than now known, but reports to this effect have so far been anecdotal. The original petitioners have indicated that the species does occur in a small part of Gabon.

Point 3.—The habitat of the goliath frog is not so restricted as indicated in the proposal, the species not being limited, for example, to areas of cascades and rapids. *Service response.*—Information from several respondents, with varying views on listing, suggests that this is a valid point. The following statement by Dr. Peter Brazaitis (New York Zoological Society, personal communication) may help resolve the issue: "I agree they are not restricted to waterfalls and rapids but are found in small cul-de-sacs and broad deep rivers most of which descend over waterfalls and rapids at some point and probably are well oxygenated."

Point 4.—The goliath frog is not rare, is easily located and caught, and probably numbers in the hundreds of thousands, and also is not a major food source for the native people. *Service response.*—The preponderance of evidence does suggest that the species can still be collected in small numbers by knowledgeable persons who are willing to go out into rivers, well away from settled areas, at night, thereby taking some risks because of the currents and other hazards. It is utilized for food whenever practical, though there are conflicting views on the resulting impact on over-all populations. Reports of large numbers may in part be based on observations of other species of the genus *Conraua* that occur in the same area and that may reach the size of immature *C. goliath*. In any case, absolute numbers may have little bearing on degree of threat. As noted below in the "Summary of Factors Affecting the Species," the government of Cameroon now classifies the goliath frog as "rare or on the way to extinction."

Point 5.—Extensive habitat destruction has not been observed. *Service response.*—While several respondents indicated this to be the case, other authorities with experience in the involved areas, as cited below in the "Summary of Factors Affecting the Species," do consider deforestation and various other forms of environmental disruption to be a threat to the goliath frog.

Point 6.—There is little demand for commercial or exhibitional purposes and few, if any, frogs are now being exported. *Service response.*—Information from Dr. Brazaitis (as cited above) and Professor Jean-Luc Amiet of the University of Yaounde (as conveyed

by the petitioners and in a telegram from the United States embassy in Yaounde), suggests that commercial interest was stimulated following initial collection activity and display in the 1980s. There is much potential demand for this spectacular amphibian, for such purposes as the pet trade, exhibition, and food production. The exact number of individuals exported from the range states is unknown but most reports suggest a figure in the hundreds during the 1980s. Statistics compiled by Professor Amiet show a total of 433 licensed exports from Cameroon from 1985 to 1990, with about 80 percent going to the United States and the vast majority being for commercial purposes. A 1991 ban on exportation from Cameroon reportedly has not been fully successful. Service records indicate that at least 72 individuals were exported from Equatorial Guinea and Cameroon to the United States in 1992; 5 more arrived in February 1993. The extremely high prices that have been advertised may be evidence both of demand and difficulty in obtaining specimens.

Point 7.—The goliath frog is not necessarily difficult to transport or maintain in captivity, and there is no reliable evidence showing that it is slow to reach maturity. *Service response.*—A consensus among respondents is that it is possible to successfully transport and maintain the goliath frog, and that some individuals have survived for months or years in captivity, but this involves considerable effort and diligence, many frogs have been lost, and much more must be learned before intensive utilization would be safe. All individuals kept by zoos in the United States have now died. Little is known about the biology of this species, the suggested slow maturation being only a judgment based on the great size of full grown individuals.

In the notices of July 19 and October 25, 1994, reopening the comment period, the Service observed that the above concerns had been raised and solicited additional information on these matters and other aspects of the status and biology of the goliath frog. Cables again were sent to United States embassies in appropriate countries and other requests were made for new data and comments. Of the 6 new responses received, 3 expressed support for the original proposal and 3 indicated that no new information had been obtained. Considering these responses and all previously collected material, the Service now is proceeding with a final rule to determine threatened status for the goliath frog.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the goliath frog should be classified as threatened. Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to the goliath frog (*Conraua goliath*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The goliath frog has a narrowly restricted range and has been reported to be rare therein. Despite its spectacular size it was not formally described until 1906. Subsequent investigators have commented repeatedly on how difficult the species is to locate, approach, and capture (Gewalt 1977; Perret 1957; Perret and Mertens 1957). Data compiled by the petitioners show that only 91 specimens were reported collected through 1967. The rate of collection later increased in response to growing scientific and commercial interest. Letters solicited by the petitioners from authorities in Cameroon pointed out that logging, deforestation, and dams are affecting the limited habitat of the goliath frog. For example, Roger C. Fotoso of the Laboratory of Zoology, University of Yaounde, wrote: "It is clear that the giant frog suffers from habitat loss, due to intensive deforestation in the whole region. The region in which this frog occurs corresponds to one of the most populated parts of the country * * * urgent measures need to be taken to protect the giant frog in Cameroon where it is not just lucky enough to occur in a national park or reserve." Professor Amiet (as cited by the United States embassy in Yaounde) noted that the recent establishment of reserves in Cameroon appears to have slowed or stabilized the decline of the species. With respect to the situation in neighboring Equatorial Guinea, Sabater-Pi (1985) reported that the habitat of the goliath frog "has been altered mainly by human activities, such as deforestation for agricultural purposes, forest exploitation and establishment of new villages. All these factors drastically have altered the ecosystem inhabited by the species."

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

The goliath frog is hunted by the native peoples within its range, some of whom consider its meat a delicacy. Information presented by Zahl (1967) suggests that this species is so difficult to approach, its capture is a cause for celebration. Sabater-Pi (1985) warned that it was threatened by native hunting and that effective protective measures were needed at the national level.

A new problem, and one causing much of the immediate concern for the species, is capture and export of live animals. Because of its size, the goliath frog has much potential for public and private exhibition. Advertisements submitted by the petitioners show that the asking price in early 1990 was \$599.00 for "small" specimens and \$2,500.00 for individuals weighing 6–9 pounds. In July 1992, a zoo purchased six frogs from an importer at \$1,200.00 each. An individual exported from the United States to Japan in October 1993 had a declared value of \$1,400.00. One U.S. dealer is reported to have imported many individuals and to have attempted to enter some in the well-known Frog Jump Jubilee in Calaveras County, California. Further information and statistics on commercial trade are given above in "point 6" of the "Summary of Comments and Recommendations."

In a letter to the petitioners, Bob Johnson, Curator of Amphibians and Reptiles at the Toronto Metropolitan Zoo, expressed concern that current levels of commercial exploitation might be excessive in relation to sustainability of wild populations of *Conraua goliath*. He noted also that survival rates in previous importations have not been high, primarily because of shipping stress and the time required to acclimate the species to captive conditions.

C. Disease or Predation

While not now known to be general problems, disease and natural predation are to be expected and may become of serious conservation concern for populations that already have been severely reduced or fragmented through human disturbance.

D. The Inadequacy of Existing Regulatory Mechanisms

Although the goliath frog currently is classified as vulnerable by the IUCN (Groombridge 1994), it is not covered by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Preliminary to the Eighth Meeting of the Conference of Parties to CITES, held in Kyoto in

March 1992, the Service submitted a proposal to include the goliath frog in Appendix II of CITES. However, at the meeting the Service withdrew this proposal, based mainly on an analysis developed by the IUCN Species Survival Commission Trade Specialist Group (Brautigam 1992). A subsequent review of that analysis suggests that it is not complete; all three of the substantive listed references are actually negative responses (two of them from the same parties) to the Service's proposals to list the goliath frog as threatened or to include it in Appendix II of CITES. The analysis does not utilize information from the proposals themselves, the various positive responses thereto, or the listing petition.

As noted above, exportation of the goliath frog from Africa continued at least to 1993, and effectiveness of local regulation is not well understood. However, in a letter of May 11, 1994, the Ministry of Environment and Forests of Cameroon notified the Service that the goliath frog is now classified as a species that is "rare or on the way to extinction." It is under complete legal protection in Cameroon and cannot be taken without special authorization from the Ministry.

E. Other Natural or Manmade Factors Affecting its Continued Existence

Although *Conraua goliath* is by far the world's largest frog, its eggs, tadpoles, and young are hardly larger than those of other frogs (Sabater-Pi 1985; Zahl 1967). The petitioners therefore state that *C. goliath* undoubtedly takes a longer time than do most frogs to become sexually mature, and a mature animal removed from a population will not be replaced quickly. They note also that mortality in captivity is extremely high and zoos have been unable to keep specimens for long term display. As pointed out in the above "Summary of Comments and Recommendations," some individuals have been successfully maintained for lengthy periods in captivity, but only through much effort and expense. Attempts to establish colonies at Lincoln Park Zoo, Chicago, and Washington Park Zoo, Portland, were unsuccessful. All frogs there now have died and the Service is not aware of any other zoos that are maintaining the species.

The decision to determine threatened status for the goliath frog was based on an assessment of the best available scientific information, and of past, present, and probable future threats to the species. This giant frog is narrowly distributed, and is vulnerable to human exploitation and environmental disruption. In the proposed rule the

Service noted that further review might lead to a final rule classifying the goliath frog as endangered, rather than threatened. Information obtained during the comment period, however, supports recognition of the species as threatened. Although there are questions about population status and biological factors there is general concern regarding long-term habitat trends and potential commercial demand. If conservation measures are not implemented, further declines are likely to occur, increasing the danger of extinction for the goliath frog. Critical habitat is not being determined, as its designation is not applicable to foreign species.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened pursuant to the Act include recognition, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages conservation measures by Federal, international, and private agencies, groups, and individuals.

Section 7(a) of the Act, as amended, and as implemented by regulations at 50 CFR part 402, requires Federal agencies to evaluate their actions that are to be conducted within the United States or on the high seas, with respect to any species that is proposed or listed as endangered or threatened and with respect to its proposed or designated critical habitat (if any). Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a proposed Federal action may affect a listed species, the responsible Federal agency must enter into formal consultation with the Service. No such actions within U.S. jurisdiction are currently known with respect to the species covered by this proposal.

Section 8(a) of the Act authorizes the provision of limited financial assistance for the development and management of programs that the Secretary of the Interior determines to be necessary or useful for the conservation of endangered species in foreign countries. Sections 8(b) and 8(c) of the Act authorize the Secretary to encourage conservation programs for foreign endangered species, and to provide assistance for such programs, in the form of personnel and the training of personnel.

Section 9 of the Act, and implementing regulations found at 50 CFR 17.21 and 17.31 set forth a series

of general prohibitions and exceptions that apply to all threatened wildlife. 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 commercial activity, or sell or offer for sale in interstate or foreign commerce any threatened wildlife. It also is illegal to possess, sell, deliver, transport, or ship any such wildlife that has been taken in violation of the Act. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered and threatened wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22, 17.23, and 17.32. Such permits are available for scientific purposes, to enhance propagation or survival, or for incidental take in connection with other such lawful activities. For threatened species, there are also permits for zoological exhibition, educational purposes, or special purposes consistent with the purposes of the Act.

National Environmental Policy Act

The Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act, as amended. A notice outlining the Service's reasons for this determination

was published in the Federal Register of October 25, 1983 (48 FR 49244).

Literature Cited

Brautigam, A. 1992. Analyses of proposals to amend the CITES Appendices. Submitted to the Eighth Meeting of the Conference of the Parties, Kyoto, Japan. World Conservation Union Species Survival Commission Trade Specialist Group.

Frost, D.R., ed. 1985. Amphibian species of the world. A taxonomic and geographical reference. Allen Press and Association of Systematic Collections, Lawrence, Kansas, v + 732 pp.

Gewalt, W. 1977. Einige Bemerkungen über Fang, Transport und Haltung des Goliathfrosches [*Conraua goliath*, Boulenger]. Zool. Garten 47:161-192.

Groombridge, B., ed. 1994. 1994 IUCN red list of threatened animals. World Conservation Union, Gland, Switzerland, iv + 286 pp.

Johnson, B. 1994. Declining amphibian populations task force. Species, no. 21-22, pp. 118-119.

Klass, T. 1990. Monster frogs have leg up on other jumpers. Ann Arbor News, January 9.

Perret, J.L. 1957. Observations sur *Rana goliath* Blgr. Bull. Soc. Neuchateloise Sci. Nat. 80:195-202.

Perret, J.L., and R. Mertens. 1957. Etude d'une collection herpetologique faite au Cameroun de 1952 a 1955. Bull. de I.F.A.N. 19:548-601.

Rabb, G.B. 1990. Declining amphibian populations. Species, no. 13-14, pp. 33-34.

Sabaier-Pl, J. 1985. Contribution to the biology of the giant frog (*Conraua goliath*, Boulenger). Amphibia-Reptilia 6:143-153.

Zahl, P.A. 1967. In quest of the world's largest frog. Natl. Geogr. 134:446-452.

Author

The primary author of this rule is Ronald M. Nowak, Office of Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703-358-1708).

List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Exports, Imports, Reporting and recordkeeping requirements, Transportation, and Wildlife.

Regulation Promulgation

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is hereby amended as set forth below.

PART 17—[AMENDED]

1. The authority citation for Part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Public Law 99-625, 100 Stat. 3500; unless otherwise noted.

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

§ 17.11 Endangered and threatened wildlife.

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- (h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
AMPHIBIANS							
Frog, goliath	<i>Conraua goliath</i>	Cameroon, Equatorial Guinea, Gabon.	Entire	T	566	NA	NA

Dated: November 30, 1994.
 Mollie H. Beattie,
 Director, Fish and Wildlife Service.
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