

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Listing With Endangered Status for the American Crocodile Throughout Its Range and the Saltwater Crocodile Exclusive of the Papua New Guinea Population.

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines that the American crocodile (*Crocodylus acutus*) and the saltwater crocodile (*Crocodylus porosus*) populations outside of Papua New Guinea be listed as Endangered species. This action is being taken because both species have suffered serious losses of habitat throughout their ranges and have been subject to extensive poaching for their hides. The Papua New Guinea population of *C. porosus* is not being included in this action because of the assurances of the government of Papua New Guinea that crocodiles are under strict control within that country and that wild populations are not being jeopardized. The Florida population of *C. acutus* is already listed as Endangered under provisions of the Act. This rule would provide additional protection to wild populations of both species, presently listed on the Appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, by further restricting commercial trade in their parts and products.

DATES: This rule becomes effective on January 18, 1980.

ADDRESSES: Questions concerning this action may be addressed to Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240. Comments and materials relating to this rulemaking are available for public inspection during normal business hours at the Service's Office of Endangered Species, 1000 N. Glebe Road, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT:

Mr. John L. Spinks, Jr., Chief, Office of Endangered Species, U.S. Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C. 20240 (703/235-2771).

SUPPLEMENTARY INFORMATION:

Background

The American crocodile, *Crocodylus acutus*, ranges throughout the Caribbean Sea, and on the Pacific Coast of Central and South America from Mexico to Ecuador in primarily coastal waters.

Portions of the following countries are known to have or have had populations of this species: United States, Mexico, Colombia, Venezuela, Ecuador, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Trinidad and Tobago, Jamaica, Cuba, Haiti, Dominican Republic, and Belize. The Florida population is currently listed as Endangered and its Critical Habitat has been determined (see the **Federal Registers** of September 25, 1975 [40 FR 44149-44151] and September 24, 1976 [41 FR 41914-41916]).

On May 23, 1975, Professor Federico Medem of the Faculty of Science of the National University of Colombia petitioned the Secretary of the Interior to list, under protection of the Endangered Species Act of 1973, the American crocodile throughout its range. However, only the Florida population was actually proposed and eventually listed.

The saltwater, or estuarine, crocodile, *Crocodylus porosus*, ranges throughout Southeast Asia and includes the countries of Australia, Papua New Guinea, Indonesia, Philippines, Malaysia, Thailand, Burma, Bangladesh, India, Cambodia, Vietnam, and Sri Lanka. This species may be the largest of reptiles, with reports of lengths well over 20 feet (7 meters), although leatherback sea turtles may weigh more.

All populations of the saltwater crocodile and all populations of the American crocodile, with the exception of those in Florida, were proposed as Endangered under the Similarity of Appearance clause of the Act (**Federal Register** of April 6, 1977; 42 FR 18287-18291); no final action has been taken as of this date on that proposal. Populations of *C. acutus* are listed on Appendix II (other than Florida which is on Appendix I) and *C. porosus* on Appendix I (other than Papua New Guinea which is on Appendix II) on the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

In the **Federal Register** of February 5, 1979 (44 FR 7060-7061), the Fish and Wildlife Service published a Notice of Review on the status of these species. Information contained in the notice summarized existing knowledge concerning their status and the reasons for conducting the review. Persons who desire to review these data should consult this document or the

Endangered Species Technical Bulletin of March 1979; these documents are available from the Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

On July 24, 1979, the Fish and Wildlife Service proposed that the American crocodile throughout its range and the saltwater crocodile, exclusive of the Papua New Guinea population, be listed as Endangered species (see the **Federal Register** of July 29, 1979 [44 FR 43442-43445] and the August 1979 *Endangered Species Technical Bulletin* for details of this proposal). Included in the proposal was a summary of comments from the notice of review as well as complete summaries of the status of these species.

The proposal summarized the factors thought to be contributing to the likelihood that these species could become extinct within the foreseeable future, specified the prohibitions which would be applicable if such a determination were made, and solicited comments, suggestions, objections and factual information from any interested person.

Those factors affecting the status of these species were published in the proposal to list them and are reprinted below:

1. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The increasing human population throughout the ranges of these species has resulted in a loss of much available habitat for the crocodiles. Because crocodilians do not tolerate much disturbance, especially during nesting seasons, human populations have impacted the species by harassment as well as by direct destruction of suitable basking and nesting sites. This problem (habitat destruction due to encroaching human population) is especially severe in Central America, the Caribbean, and South America (for the American crocodile) and Southeast Asia, such as Sarawak and Sri Lanka (for the estuarine crocodile). It is most probable that the continuing expansion of human populations in these areas will result in increasing amounts of habitat destruction and harassment (i.e. curtailment of its range) in the future.

2. *Overutilization for commercial, sporting, scientific, or educational purposes.* This is the major factor involved in the decline of both *C. acutus* and *C. porosus*. The hides are extremely valuable in the production of fashionable leather luxury items; this has led to the severe decline or elimination via hunting of virtually all populations of both species where not protected. Indeed, even in countries with restricted taking of and commerce in

crocodiles, poaching continues to severely impact crocodilian populations. In some countries, poorly managed and ill-conceived commercial crocodile farming schemes have also resulted in a drain on populations, particularly of *C. porosus*, since they often rely on young collected in the wild. Some farms have gone as far as to hybridize *C. porosus* with protected species in order to circumvent trade and conservation restrictions, thus resulting in a drain on both species involved. Commercial exploitation can be expected to continue as prices are high and regulatory mechanisms are weak or lacking.

3. *Disease or predation.* These factors are probably not significant in the decline of *C. acutus* and *C. porosus*. However, natural predation may seriously affect the ability of populations already reduced through overexploitation and habitat destruction to maintain themselves.

4. *The inadequacy of existing regulatory mechanisms.* While many of the countries where these species occur have laws to protect crocodilians, they are often ignored, unenforced, or impossible to enforce because of lack of manpower, funds or magnitude of the problem. The lack of effective means to protect crocodilians is a major problem in the conservation of wild populations of these species; this is especially true with both *C. acutus* and *C. porosus*.

5. *Other natural or man-made factors affecting its continued existence.* Malicious killing of these crocodilians occurs wherever they are found and undoubtedly contributes to their decline, especially in areas near human populations. Crocodiles are also taken accidentally by fishing nets and are killed whenever encountered, especially *C. porosus*, where the species has a reputation as a man-eater.

After the Service published the proposal, several additional letters arrived which were in response to the notice of review. This information was received from U.S. embassies or consulates in Belize, Nicaragua, Jamaica, and Burma. The American crocodile is Endangered in Belize by habitat destruction and crocodile hunting; in Nicaragua, it is considered to have reached a very low level and is in danger of extinction; Jamaica does not consider the crocodile either Endangered or Threatened and estimates that there are 2,000 crocodiles in the country. However, any significant destruction of remaining wetlands could put this species at once in jeopardy. Jamaica does not have adequate powers of wildlife law enforcement and would benefit from the enactment and vigilant observance of import restrictions in the

U.S. Jamaica indicated that the reduction of commercial incentive to exploitation of its wild stock would be regarded with favor. The Burmese government considers the estuarine crocodile to be in danger of extinction and has instituted conservation measures to preserve the natural habitat. In addition, it is attempting to restrict illegal crocodile hunting and has begun to breed the animals in captivity.

Summary of Comments

Section 4(b)(1)(C) of the Act requires that a summary of all comments and recommendations received be published in the **Federal Register** prior to adding any species to the List of Endangered and Threatened Wildlife.

In the July 29, 1979, **Federal Register** proposed rulemaking (43 FR 43442-43445) and associated July 26, 1979, Press Release, all interested parties were invited to submit factual reports or information which might contribute to the formulation of a final rulemaking.

All public comments received during the period of July 29, 1979, to October 29, 1979, were considered.

A total of 11 comments were received. All favored protection as proposed.

Dr. Howard W. Campbell (National Fish and Wildlife Laboratory): Dr. Campbell supplied updated information to that previously supplied the Office of Endangered Species. This information is repeated below:

Haiti: The American crocodile still exists in this country but there are very few data on distribution and status. Dr. Fred G. Thompson of the Florida State Museum recently located two extant populations of unknown size but limited geographic extent, one along the northern coast at Cap-Haitien and one on the western coast at St. Marc. Both populations are under heavy human predation for eggs (they are eaten) and adults and young for hides and for curios for the tourist trade. Dr. Thompson suspects some crocodiles may still survive in another location, the relatively inaccessible Trou Cayman Swamp in the southern part of the country. The only factor protecting these known and suspected populations is accessibility. Crocodiles are taken at every opportunity and as these areas become more accessible the populations will probably be lost unless some protective measures are taken.

Dominican Republic: Crocodiles are severely reduced or extirpated over all of this country except for the swamps of the northwestern area around Monte Cristo and in Lago Enriquillo in the southwest. This latter population numbered in the hundreds and was perhaps the most locally dense population of the American crocodile remaining anywhere in its range. Unfortunately, the population is now in extreme duress due to pollution and dropping water levels in the lake as a result of agriculture activities in the immediate area. Local biologists are now attempting to

relocate the crocodiles in hope of saving some individuals. There is, however, little if any secure habitat available for such a relocation and the fate of translocated adults is uncertain. The situation in this country has rapidly degraded from low/stable to critical for the crocodile with the loss of this piece of habitat.

Mexico: Mexican biologists are currently attempting to protect a population of American crocodiles of unknown size in the "Laguna Caimanero," a marsh and lagoon immediately south of Mazatlan, Sinaloa. Heavy human use of this habitat by hunters and commercial fishermen is imposing difficulties, however. This is the only confirmed breeding population of crocodiles remaining on Mexico's west coast but other small pockets near Teacapan, San Blas, and along the Guerrero and Chiapas coasts are probable.

The current oil spill occurring along the east coast of Mexico has a high probability of impact on crocodiles in coastal marshes and mangroves but no data are presently available. This situation should be watched for potential long-term effects.

Costa Rica: Recent reports of crocodiles in the Palo Verde Biological Reserve on the Pacific coast (G. Bertrand, pers. comm.) suggest that a population is resident in this area. Costa Rican biologists express considerable concern over the status of both crocodilian species in their country and rate basic status surveys as high priority among their needs.

In addition, the Service received a brief report by Lala A. K. Singh of the Gharial Research and Conservation Unit in Tikerpada, India. Mr. Singh reviewed the status of the saltwater crocodile and outlined the rearing program for restocking the species in India. He makes the following information available: 1. The largest concentration of crocodiles on the mainland coast is located at the Bhitarkanika Sanctuary and consists of only approximately 29 adults, 5 subadults, and 156 juveniles; 2. A good population of nearly 100 animals may exist in the Sundarbans of West Bengal; 3. The presence of this species is doubtful in Andhra Pradesh and they are extinct in Tamilnadu. This species was last seen in Tamilnadu near Coleron but the site has since dried up because of the Mettur Dam on the River Cauvery; 4. Although once abundant, by the mid-1970's crocodiles had become rare in the Andamans. In conclusion, he strongly supported protection as an Endangered species.

The U.S. embassy in Australia supplied information given to it by the Australian National Parks and Wildlife Service (ANPWS). Mr. Graeme Kelleher, Acting Director of ANPWS, provided several reports of research conducted by Dr. H. Messel in northern Australia. These documents provide a review of saltwater crocodile status which indicates that many populations are severely depleted and at best are just maintaining present numbers. Mr. Kelleher goes on to say:

"In December 1972, the Australian Government imposed and has since maintained a total prohibition on the export from Australia of all crocodile skins and skin products. This move effectively removed the

major incentive behind crocodile hunting viz to supply international markets. Since 1974, both species of Australian crocodiles, *C. porosus* and the endemic freshwater species *C. johnstoni* have received total protection by legislation in each of the States where the species occur, namely Western Australia, Northern Territory and Queensland.

Although populations of both species were seriously depleted prior to legislative protection, recent intensive surveys of northern Australian rivers suggest there may be limited recovery in some regions."

Dr. Faith Campbell (National Resources Defense Council) supported the proposal and added information on the saltwater crocodile in the Andaman Islands. Dr. Campbell states:

"According to a recent survey, populations of *C. porosus* in the Andaman Islands have declined sharply in recent years due to destruction of habitat. Virtually all freshwater streams needed for nesting now support human settlements. The crocodile population of the islands is now estimated to be 100-200 on North Andaman, 50-100 on Middle Andaman, 20-30 on South Andaman. Little Andaman was not surveyed. [*Oryx* Vol. XV #1, June 1979, page 22.]"

Three other individuals supported the proposal but questioned the exclusion of the Papua New Guinea population of *C. porosus*—Dr. J. W. Gibbons (Savannah River Ecology Lab), H. Livingstain and Dr. H.R. Bustard (Crocodile Breeding and Management Project, India). The Service believes that such exclusion will not result in jeopardy to *C. porosus* in this region and will continue to monitor the crocodile population in this area closely through contacts with the government of Papua New Guinea and scientists working on the species. Should a decline in the status occur, the Service will quickly take appropriate measures to list the saltwater crocodile under provisions of the Endangered Species Act of 1973.

The following individuals supported the proposal but added no new information: Dr. F. W. King (Florida State Museum), Dr. W. R. Courtenay, Jr. (American Society of Ichthyologists and Herpetologists), Mr. Hank Guarisco, and Mr. Bob Davis.

After a thorough review and consideration of all the information available, the Director has determined that (1) the two species of crocodiles are Threatened with becoming extinct throughout all or a significant portion of their ranges (except the Papua New Guinea population of *C. porosus*) due to one or more of the factors described in Section 4(a) of the Act, as specified in the proposal of July 29, 1979 (44 FR 43442-43445) and discussed above, and (2) listing these species as Endangered will provide them with necessary protections to ensure their survival.

Effects of the Rulemaking

Endangered species regulations already published in Title 50 of the Code of Federal Regulations set forth a series of general prohibitions and exceptions which apply to all Endangered species. The regulations referred to above, which pertain to Endangered species, are found at § 17.21 of Title 50, and are summarized below.

With respect to the American crocodile and estuarine crocodile (except the Papua New Guinea population), all prohibitions of Section 9(a)(1) of the Act, as implemented by 50 CFR 17.21, would apply. These prohibitions, in part, would 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 these species in interstate or foreign commerce. It also would be illegal to

possess, sell, deliver, carry, transport, or ship any such wildlife which was illegally taken. Certain exceptions would apply to agents of the Service and State conservation agencies.

Regulations published in the **Federal Register** of September 26, 1975 (40 FR 44412), codified at 50 CFR 17.22 and 17.23, provided for the issuance of permits to carry out otherwise prohibited activities involving Endangered or Threatened species under certain circumstances. Such permits involving Endangered species are available for scientific purposes or to enhance the propagation or survival of the species. In some instances, permits may be issued during a specified period of time to relieve undue economic hardship which would be suffered if such relief were not available.

National Environmental Policy Act

An environmental assessment has been prepared pursuant to Executive Order 12114 and is on file in the Service's Washington Office of Endangered Species, Suite 500, 1000 N. Glebe Road, Arlington, Virginia. It addresses this action as it involves the two crocodilians.

The primary author of this rule is Dr. C. Kenneth Dodd, Jr., Office of Endangered Species (703/235-1975).

Regulations Promulgation

Accordingly, Part 17, Subchapter B of Chapter I, Title 50 of the U.S. Code of Federal Regulations is amended as follows:

1. By adding the American crocodile throughout its range and the estuarine crocodile (exclusive of the Papua New Guinea population) to the list, alphabetically, under "Reptiles" as indicated below:

§ 17.11 Endangered and threatened wildlife.

Species		Range			Status	When listed	Special rules
Common name	Scientific name	Population	Known distribution	Portion endangered			
Reptiles							
Crocodile, American.....	<i>Crocodylus acutus</i>	NA.....	U.S.A. (FL), Mexico, S. & C. America, Caribbean.....	Entire.....	E	86	NA
Crocodile, Saltwater (Estuarine)	<i>Crocodylus porosus</i> ..	Entire, except Papua New Guinea.....	Southeast Asia, Australia, Papua New Guinea, Pacific Islands.....	Entire, except Papua New Guinea.....	E	NA

Note.—The Department of the Interior has determined that this rule is not a significant rule and does not require preparation of a regulatory analysis under Executive Order 12044 and 43 CFR 14.

Dated: December 12, 1979.

Lynn A. Greenwalt,
Director, Fish and Wildlife Service.

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