management of alligators on a statewide basis in accordance with Section 4(e) of the Endangered Species Act of 1973, as amended, and with the Service's special rule on Threatened American alligators (50 CFR 17.42(a)). The Service is requesting information on environmental and economic impacts and effects on small entities that would result from reclassifying the American alligator as Threatened due to Similarity of Appearance in Texas.

DATES: Comments from the public must be received by November 12, 1982. Comments from the Governor of Texas must be received by December 13, 1982.

ADDRESSES: Comments and materials concerning the proposal should be sent to the Regional Director, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103. Comments and materials related to this rule will be available for public inspection by appointment during normal business hours at 421 Gold Avenue, S.W., Room 407, Albuquerque, New Mexico.

FOR FURTHER INFORMATION CONTACT: Mr. Jack Woody, Endangered Species Coordinator, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-3872).

SUPPLEMENTARY INFORMATION:

Background

The population density of the American alligator (Alligator mississippiensis) in the United States varies in the Southeast and includes all or parts of the States of Alabama, Arkansas, Georgia, Florida, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, and Texas. The American alligator was first classified as Endangered throughout its range in 1967 because hunting and poaching substantially reduced alligator numbers. Subsequently, in response to strict Federal and State protection, the alligator recovered rapidly in many parts of its range. Its recovery then enabled the Service to undertake the following reclassification actions: (1) Reclassification to Threatened due to Similarity of Appearance in three coastal parishes of Louisiana that reflected complete recovery (September 20, 1975; 40 FR 44412); (2) Reclassification to Threatened that reflected partial recovery in all of Florida and certain coastal areas in Georgia, Louisiana, South Carolina, and Texas (January 10, 1977; 42 FR 2077); (3) Reclassification to Threatened due to Similarity of Appearance again reflecting complete recovery in nine additional parishes of Louisiana (June 25, 1978; 43 FR 37130); (4) Elimination of the permit requirement for fabricators of alligator products from lawfully taken alligators so long as the fabricators comply with the laws and regulations of: (a) The State in which the taking occurs, and (b) the State in which the sale occurs (November 25, 1980; 45 FR 79153); and (5) Reclassification to Threatened due to Similarity of Appearance throughout the State of Louisiana reflecting complete recovery of the species (August 10, 1981; 46 FR 40684).

Alligators in Texas have been studied by Crouch (1974), Potter (1974, 1975, 1981), Dixon and Staton (1976), and Kroll (1976). Crouch used a series of survey forms, live capture, and accumulated data on botanical, environmental, meteorological, and sociological parameters to prepare a report on the status of alligator habitat and populations in Texas. Dixon and Staton (1976) studied the survival, movements, and possible predation on alligators through their first 1.5 years of life on two coastal marsh sites and one inland pond site in East Texas. The marsh sites (Sea Rim State Park) contained 10 nests. The nests and their subsequent pods were followed through a winter and a summer period. Eight pods of the 10 nests were successful, while the contents of one nest drowned before hatching and the other was lost through predation. The inland nest site has been followed for 10 years, with a known marked female nesting each of those 10 years. As the size of the female increased, clutch size increased slightly from 34 to 48 with an average of 42 eggs. This single female has produced enough individuals that alligator reports in the county (Dixon, pers. comm.) are commonplace today, whereas 10 years ago there were no reports of alligators in the county.

Two Texas &M University students followed one female through three nesting periods (1969-71) at the Welder Wildlife Foundation Refuge in South Texas. This female nested in the exact same place each year with clutches of 35, 37, and 46 eggs, respectively. The 1969 clutch failed from an insect attacking the eggs, but the 1970-71 eggs hatched. However, following hatching, the pods were decimated by predation from great blue herons, common and Louisiana herons, and snowy egrets; these birds were observed eating the young alligators. Twelve alligators survived from the two successful hatching periods (Dixon, unpublished data).

Kroll (1976) studied the movements of captive bred and reared alligators released into two East Texas sites. One adult female (2.79m LOA, 124kg) was released in Big Slough on March 22.
1975, and observed nesting on June 14, 1975. Crouch (1974) also observed active nesting associated with power plant lakes, and Kroll (1976) followed up Crouch's observations in additional years and observed increased nesting activities.

The data accumulated by university, State, and private biologists point to increased numbers of alligators in prime marsh and marginal inland habitats through increased nesting and nesting success. In addition, Service data indicate four National Wildlife Refuges along the Texas coast have shown an increase in alligator populations from 1977 to 1978. Alligator populations doubled at Anahuac, Aransas, and Laguna Refuges and slightly increased at the Brazoria Wildlife Refuge (Klett 1981).

Smith (1975a, b; 1976a, b; 1979, 1980) has provided important data concerning the physiological requirements of Texas alligators, i.e., thermoregulation and behavior, parasitism, population densities of alligators on a South Texas refuge, heating and cooling mechanisms, cutaneous blood flow, and other physiological parameters.

Potter (1981) accumulated data on population structure of Texas alligators by questionnaires, aerial surveys of alligator nests: night line-transect counts in marsh and inland waters, and by other means. Whereas Crouch's, Kroll's, Dixon's and Staton's studies were of short duration (less than 2 years), Potter maintained annual counts of alligators by line-transects, aerial surveys, and survey questionnaires for 7 years (1975-1981).

Potter (1981) indicated that alligator populations in prime Texas habitat have doubled in the past 5 years, based upon a census technique supplied by Taylor (1960). Potter also noted that the number of nests per square mile in census areas increased from 1.95 in 1976-78, to 4.05 in 1979-80. Furthermore, recent surveys indicated that nest densities appear to be near maximum and population growth may have reached optimum proportions (Potter 1981). This is consistent with recent data from Louisiana which indicated that the alligator population structure is stable and is limited by the support capability of the habitat; consequently, no further significant increases in Louisiana alligator numbers can be expected (Taylor 1980). The Service believes that the best scientific and commercial data available indicate that the Texas population of alligators has recovered and is no longer biologically Endangered or Threatened.

However, because of the similarity of appearance of alligator hides and parts to protected crocodilians, it is necessary to restrict commercial activities involving alligator specimens taken in Texas to insure the conservation of other alligator populations, as well as other crocodilians that are Threatened or Endangered. Recent amendments to the Texas Parks and Wildlife Code, i.e., addition of Chapter 65, gives the Texas Parks and Wildlife Department authority to regulate the taking, possession, and sale of alligators or any part of an alligator.

Section 4(e) of the Endangered Species Act authorizes the treatment of a species (or subspecies or group of wildlife in common spatial arrangement) as an Endangered or Threatened species even though it is not otherwise listed as Endangered or Threatened if it is found: (a) That the species so closely resembles in appearance an Endangered or Threatened species; (b) That the effect of this substantial difficulty is an additional threat to the Endangered or Threatened species; and (c) That such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of the Act. American alligators in Texas are presently listed as Threatened or Endangered. Currently, commercial take of alligators in Texas under any condition is illegal. This insures the conservation of alligators and other crocodilians. This proposed rule would permit regulated commercial harvest of alligators in Texas as part of the State's alligator management program in a manner authorized by Texas law and compatible with conservation of Endangered and Threatened populations of alligators and crocodilians.

Factors Affecting the Species

The Service's listing regulations (Section 424.11[d], Title 50, Code of Federal Regulations) further state that a species may be removed from the Federal list of Threatened and Endangered species if the best scientific and commercial data available to the Director substantiate that the species is neither Endangered nor Threatened for one or more of the following reasons: (1) Extinction. Unless each individual of the listed species was previously identified and located, a sufficient period of time must be allowed before delisting to clearly insure that the species is in fact extinct.

(2) Recovery of the species. The principal goal of the Service is to return listed species to a point at which protection under the Act is no longer required. A species may be delisted if evidence shows that it is no longer Endangered or Threatened.

(3) Original data for classification in error. Subsequent investigation may produce data that show that the best scientific or commercial data available at the time that the species was listed were in error.

These findings are summarized herein under each of the five criteria of 50 CFR 424.11(b). These factors, and their application to the American alligator in Texas, are as follows:

1. The present or threatened destruction, modification, or curtailment of its habitat or range. The total size of alligator populations in Texas is influenced greatly by the amount of Available aquatic or wetland habitats. Examples of these habitats are rivers, bayous, canals, lakes, ponds, marshes, and swamps. The amount of good alligator wetlands in Texas was conservatively estimated by Potter (1981) from unfinished analysis of satellite photographs to be 1,086,720 acres (439,986 ha); the total aquatic habitat suitable for alligators in Texas could be as much as 3.7 million acres (1,497,376 ha) made up of fresh, intermediate, and brackish waters. Taylor (1960) indicated non-marsh, permanently flooded habitat in Louisiana with woody and herbaceous cover dominated by bald cypress and tupelo gum apparently produces higher densities of alligators in many instances than marshland habitats. This cypress-tupelo habitat extends into and is common in southeastern Texas (Potter 1981).

The estimated 9,649 miles of streams in historical alligator range in Texas support alligators to the extent permitted by the presence of oxbows and marshlands associated with the streams. Streams without adjacent, permanently inundated cypress-tupelo or marshland habitat areas constitute poor quality habitat and support insignificant numbers of alligators. A minimum estimate of non-marsh alligator habitat in Texas consists of 786,000 acres (320,726 ha) of all vegetation associations with permanent water levels, and 31,754 shoreline miles of private and public wetlands in the form of ponds and lakes (Potter 1981).

Prime coastal alligator habitat in the Chetner Plain was reduced by 20.0 percent between 1952-1974 (Gosselin et al., 1979). However, permanently flooded cypress-tupelo association and open water acres are changed slowly by water management practices.
The overall picture of statewide habitat is good, because much of the prime habitat is under State and Federal control and because water storage activities are increasing habitat availability (Potter 1981). Therefore, habitat alteration and loss pose no serious threat to alligator populations in Texas within the foreseeable future.

2. Utilization for commercial, sporting, scientific, or educational purposes at levels that detrimentally affect the species. The commercial demand for products from alligators, including hides, teeth, and meat is high. This demand and the harvest generated by the demand were responsible for a decline in alligators throughout their range in the 1950's and 1960's (with some exceptions, such as on sanctuaries and wildlife refuges). This decline was reversed by the following actions: (1) The State of Texas closed alligator seasons in 1969; (2) The Lacey Act was amended in 1969 to include control of interstate commerce in reptiles; (3) The Endangered Species Act was passed in 1973; (4) State and Federal authorities vigorously enforced these protective measures.

Taylor (1980) and Potter (1981) provide convincing evidence that under strict protection, reproductive capability of the species provides for rapid recovery. Experience in Louisiana clearly documented the impact of controlled harvest on alligators. A comparison between size-class frequencies found in non-marsh night counts and hide measurements from harvested areas shows no statistical difference in population structure. Furthermore, a comparison of population structure from a series of time specific views (1975-90), shows no trend towards shrinkage of adult/subadult size-class ratios or increasing adult/subadult size-class ratios, either of which would be indicative of populations moving away from stability.

Since the Texas alligator population is adjacent to that of Louisiana (very similar ecological conditions exist in the adjacent areas), much of the information from Texas (Potter 1981) and from Louisiana (Chabreck 1980, Taylor 1980) apply equally to the populations of alligators in both States. These data indicate alligators are not being detrimentally affected by legal harvests in Louisiana marshlands or by illegal taking in marsh or non-marsh areas in either State. Some illegal taking undoubtedly continues to occur, but the State's and Service's law enforcement efforts have reduced this to insignificant levels. The inaccessibility of non-marsh habitats further helps to protect the species in these areas (Kroll 1976, Crouch 1974, Potter 1981).

3. Disease or predation. Alligators suffer various types of disease and predation, but these factors are not excessive and are not known to have hindered alligator recovery.

4. Absence of existing regulatory mechanisms adequate to prevent the decline of a species or degradation of its habitat. The following State and Federal laws and regulations adequately protect the alligator in Texas: (a) Chapter 65 of the Texas Parks and Wildlife Code regulates harvest, possession, and sale of alligators; (b) the 1969 amendment to the Lacey Act extends Federal law enforcement authority to include interstate movement of reptiles; (c) the Endangered Species Act of 1973 provides mandatory protection for listed alligators; special rules promulgated by the Service for Threatened (Including Similarity due to Appearance) alligators govern taking of all commerce in alligator products; (e) the annual findings of the Scientific and Management Authorities of the Service govern the export of species, including the alligator, listed on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The success of efforts by State and Federal agencies to stop illegal activity involving alligators is evidenced by the recovery of alligator populations throughout the State of Texas.

5. Other natural or manmade factors affecting its continued existence. Although other factors occasionally may have an affect on some alligators, e.g., freezes and flooding of nests: none of these factors are known to have limited recovery of the alligator in Texas nor are they expected to become threatening factors in the future.

References Cited


Effects of This Proposal if Published as a Final Rule

This proposal, if made final, would change the status of the American alligator in Texas from Endangered or Threatened to a statewide status of Threatened due to Similarity of Appearance. The rule would formally recognize the biological recovery of the American alligator in a part of its range. A final rule would result in a removal of Federal agency responsibilities under
Section 7 of the Endangered Species Act. No adverse effects to the status of this species are expected to occur if this proposal is enacted as a final rule.

A final rule resulting from this proposal would give the State an option to allow alligator harvests in specified counties. If the State elects to harvest its alligators, harvests would be allowed at a level commensurate with development and implementation of a management program. The economic value of the alligator resource under a sustained yield scheme may result in significant economic benefits to Texas trappers and others participating in the commercial process. The value of alligators also may help reduce indiscriminate, illegal killing of alligators. Harvests would be expected to increase the workloads of the personnel of Texas Parks and Wildlife Department, the Texas Department of Health, and the Service's Division of Law Enforcement. Conversely, the harvests would be expected to reduce the number of nuisance alligator complaints which are increasing rapidly (Bill Brownlie, Texas Parks and Wildlife, pers. comm.) and result in a corresponding reduction in manpower commitments devoted to handling nuisance alligators. Local governments involved in catching and removing nuisance alligators would receive some relief if the number of larger, more dangerous alligators were reduced in areas with human-alligator conflicts.

Harvest of alligators in Texas would create the potential for an increased volume of alligator exports. The Service has previously expressed its concern about the effects of increased exports on Endangered crocodilians that occur in international trade. International trade in alligator products is presently allowed with certain restrictions in the form of licensing and permit requirements for buyers and tanners. A determination by the Service (October 21, 1980; 45 FR 69944) on this subject concluded that the export of alligators taken during the 1980-81 season in Florida and the 1980 season in Louisiana was not detrimental to the survival of the alligator or other Endangered crocodilians. The Service will continue to review this possible impact and will take appropriate action, if evidence indicates that restrictions are warranted.

This proposed action, if completed, would not be an irreversible commitment on the part of the Service. The action is reversible and relisting would be possible should the State change existing management programs or other changes occur which result in new threats to the species' recovery of recovery or crocodilians.

Public Comments Solicited

The Service intends that the rules finally adopted will be as accurate and effective as possible toward conservation of any Endangered or Threatened species. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, private interests, or any other interested party concerning any aspect of these proposed rules are hereby solicited. Comments particularly are sought concerning: (1) Biological, commercial, or other relevant data concerning any threat (or lack thereof) to the species included in this proposal; (2) additional information concerning the range and distribution of this species.

Also, the Service is requesting information on environmental and economic impacts and effects on small businesses, small organizations, small governmental jurisdictions, and other small entities that would result from the reclassification of the American alligator to Threatened by Similarity of Appearance and information on other possible conservation or use measures. This information will aid the Service in complying with the requirements of the National Environmental Policy Act, Executive Order 12291 on Federal Regulation, and the Regulatory Flexibility Act, and in preparing any analyses of effect. The Department has determined that this proposed rule is not major under Executive Order 12291.

Information Collection and Recordkeeping Requirements

This proposed rule does not contain information collection requirements subject to Office of Management and Budget review under the Paperwork Reduction Act of 1980 (44 U.S.C.3501 et seq.). The special rules for alligators treated as Threatened by Similarity of Appearance (50 CFR 17.42(a)) would remain in effect and would provide the needed regulation of trade in hides and meat.

Effect on Small Entities

The Department has determined that this proposed rule would not have a significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.). The only entity directly affected by the rule would be the State of Texas. The rule would give the State discretionary authority to further manage alligator nuisance problems and to conduct regulated harvest. The course of action (if any) which the State chooses to take when given this discretionary authority is not dictated or imposed by the rule. Any economic effect upon small entities will result from the wishes of the sovereign State of Texas.

It is expected that costs of alligator nuisance control will diminish in the counties affected if the State increases hunting and decreases the number of alligators. The rule does not add any recordkeeping requirements which might affect small entities (trade in alligator hides and meat from Texas would be regulated by Special Rule, 50 CFR 17.42(a) now in effect in Louisiana).

The landowners and trappers that might be affected by this rule could experience an increase in income from harvesting alligators, if the State of Texas chooses to allow alligator hunting. The income from harvesting is initially expected to amount to $238 million. The option of hunting could result in 87 jobs. The initial marketing in Texas is expected to be handled by the present fur dealers. The alligator meat, leather and parts buyers, processors, wholesalers, and retailers presently in Louisiana could experience an increase in business. It is also expected that eventually such a domestic marketing system would be developed in Texas. Because of the diversity of impact upon these industries, it is presently impossible to trace a very speculative increase in business. All effect is expected to be beneficial. Because the demand for all alligators is high and is expected to remain well above supply, an increase in alligator hunting is not expected to affect the monetary returns of alligator farmers.

Should the State of Texas exercise the option of instituting a statewide alligator management program, there would be some effects on State and local governments. Administration of harvest would require preharvest surveys, computation of removal rates, tag allocation, and law enforcement monitoring of harvests and additional commercial enterprises in alligator products. The Texas Parks and Wildlife Department would have to support this additional workload to comply with the Special Rules issued by the Service and those governing rules promulgated by the State of Texas. The biological and enforcement staffs and facilities of the Department's district offices would be available for handling this increased workload. The Texas State Health Department, in monitoring the sale of alligator meat, could receive an increased workload should demand continue to grow. The costs of such
activities is presently unestimated but is expected to be greatly exceeded by the economic benefits of this determination.

This finding is made as a result of staff discussions and the analysis of data provided by the Louisiana Department of Wildlife and Fisheries, the Texas Parks and Wildlife Department, and Texas A & M University.

National Environmental Policy Act

A draft environmental assessment has been prepared in conjunction with this proposal. It is on file in the Service's Regional Office of Endangered Species, 500 Gold SW., Albuquerque, New Mexico, and may be examined by appointment during regular business hours. A determination will be made at the time of the final rule as to whether this is a major Federal action which would significantly affect the quality of the human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969 [40 CFR Parts 1500-1508].

Note—All cited literature, including unpublished reports, are available in the Service's Jackson Area Office, Jackson, Mississippi and the Albuquerque Regional Office, Albuquerque, New Mexico.

Primary Author

The principal author of this rule is David Bowman, U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

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<th>Scientific name</th>
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<th>When listed</th>
<th>Critical habitat</th>
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<td>11, 47, 51</td>
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2. It is further proposed to amend Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, as set forth below.

Paragraph (a)(1) of 17.42 is revised to read as follows:

§ 17.42 Special rules—reptiles.

(a) American alligator (Alligator mississippiensis).

(1) Definitions. For purpose of this paragraph (a):

"American alligator" shall mean any member of the species Alligator mississippiensis, whether alive or dead, and any part, product, egg, or offspring thereof occurring: (i) in captivity wherever found, (ii) in the wild wherever the species is listed under § 17.111 as Threatened by Similarity of Appearance, or (iii) in the wild in Florida and in the coastal areas of Georgia and South Carolina, contained within the following boundaries: From Winyah Bay near Georgetown, South Carolina, west on U.S. Highway 17 to Georgetown; thence west and south on U.S. Alternate Highway 17 to junction with South Carolina State Highway 63 south of Walterboro, South Carolina; thence west on State Highway 63 to junction with U.S. Interstate Highway 95; thence south on U.S. Interstate Highway 95 (including incomplete portions) across the South Carolina-Georgia border to junction with U.S. Highway 82 in Liberty County, Georgia; thence southwest on U.S. Highway 82 to junction with U.S. Highway 84 at Waycross, Georgia; thence west on U.S. Highway 84 to the Alabama-Georgia border; thence south along this border to the Florida border and following the Florida border west and south to its termination at the Gulf of Mexico.

"Buyer" shall mean a person engaged in buying a raw, green, salted, or otherwise untanned hide of an American alligator.

"Tanner" shall mean a person engaged in processing a raw, green, salted, or otherwise untanned hide of an American alligator into leather.

Dated: July 15, 1982.

G. Ray Arnett,
Assistant Secretary for Fish and Wildlife and Parks.

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