federal register

Thursday
May 31, 1979

Part IX

# Endangered Species Scientific Authority

## American Alligator; Proposed Export Findings for the 1979 Harvest Season

## ENDANGERED SPECIES SCIENTIFIC AUTHORITY

[50 CFR Part 810]

## Exports of Appendix II Species; American Alligator—Proposed Export Findings for the 1979 Harvest Season

**AGENCY:** Endangered Species Scientifc Authority.

**ACTION:** Proposed rulemaking.

**SUMMARY:** The Endangered Species Scientific Authority (ESSA) proposes findings as to whether commercial export of American alligator hides harvested after June 28, 1979, will not be detrimental to the survival of the alligator or other crocodilian species. These findings are meant to satisfy ESSA's responsibilities under Article IV, paragraph 2 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Federal export permits could be issued only for hides that were harvested in Louisiana and Florida subject to specified conditions. The ESSA seeks public comment in order to base such determinations on the best available information.

**DATES:** Comments are due on or before July 30, 1979.

**ADDRESS:** Comments should be addressed to the Executive Secretary, Endangered Species Scientific Authority, 18th & C Streets, NW, Washington, DC 20240. Forthcoming comments and comments already received will be available for public inspection at room 536, 1717 H Street, NW, Washington, DC, 7:45 a.m. to 5:30 p.m., Mondays through Fridays except federal holidays.

**FOR FURTHER INFORMATION CONCERNING BIOLOGICAL FINDINGS CONTACT:** Dr. Peter C. Escherich, Staff Zoologist, Endangered Species Scientific Authority, 18th & C Streets, NW, Washington, DC 20240, 202–653–5948.

**FOR INFORMATION CONCERNING EXPORT PERMITS CONTACT:** Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, DC 20240, 703–235–1903.

**SUPPLEMENTARY INFORMATION:** The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and its implementing regulations, 50 CFR Part 23, control international trade in animal and plant species, subspecies or geographically separate populations included in any to three appendices, listed in 50 CFR 23.23. Currently 51 nations are party to the CITES. The CITES is implemented in each Party by one or more scientific authorities and one or more management authorities. The CITES appendixes are distinct from the list of species issued under the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq.

As discussed in our notice of April 30 1979 (44 FR 25383), the Department of the Interior, as U.S. Management Authority (MA), may grant an export permit for a specimen of an Appendix II species, only after the ESSA has found that the export "will not be detrimental to the survival of that species" (Article IV 2(a)). For specimens of species included in Appendix II under Article II 2(a), because of potential threat to their own survival, we propose to address the potential effect of exports on the listed species itself; for species included in Appendix II under Article II 2(b), to protect other species, we propose to address how such exports may affect the status of the species intended to be protected: those associated species included in Appendix II under Article II 2(a), or included in Appendix I.

In certain cases it may be necessary to include a species in Appendix II both because it may become threatened with extinction and because its trade must be regulated to effectively control trade in other species included because of biological jeopardy. In such cases the ESSA proposes to make two findings on detriment, one with respect to Article II 2(a) and the other with respect to Article II 2(b).

The U.S. proposed to transfer the American alligator *(Alligator mississippiensis)* from Appendix I to Appendix II under Article II 2(a) and Article II 2(b) of the CITES (February 14, 1979, Federal Register, 44 FR 9689). Transfer to Appendix II was agreed to at the Second Meeting of the Conference of the Parties and will become effective June 28, 1979 (44 FR 25480, May 1, 1979). An advance notice of proposed export findings for the alligator was published on April 30, 1979 (44 FR 25383). The ESSA now proposes seprate findings on detriment with respect to Article II 2(a) and Article II 2(b) for exports of hides of this species taken on or after June 28, 1979. The present findings are independent of any findings on export of hides taken prior to June 28. Such findings await a determination by the MA whether it is prepared to issue export permits for hides taken while the species was included in Appendix I.

### Environmental Assessment

*No significant impact*

The ESSA has determined that the standards for findings proposed below in this notice for American alligator are not major Federal actions that 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. Accordingly, an Environmental Impact Statement on this proposal will not be prepared.

*Alternative extremes*

The ESSA potentially could adopt standards allowing export of alligator hides without any conditions imposed by the ESSA, or standards resulting in essentially no export. In our view, neither of these two extremes would constitute a major Federal action significantly affecting the quality of the human environment; consequently, the proposed intermediate standards and findings and any similar final actions would not have such an effect.

*Status*

The following information is summarized from Doc. 2.26.8, offered by the United States at the Second Conference of the CITES Parties in support of the U.S. proposal to transfer the alligator to Appendix II.

*Distribution*

The American alligator is distributed throughout fresh and brackish water habitats in the coastal region of the southeastern United States from central North Carolina to Texas and north along the Mississippi River drainage into extreme southeastern Oklahoma and southern Arkansas (Joanen 1974). Large marsh-bordered lakes, fresh and brackish water marshes, and savannas appear to support the highest densities (Reese 1915; McIlhenny 1935; Fogarty 1974).

The present range approaches the historical range. There is evidence that the species once ranged north of central north Carolina into the Dismal Swamp region of southeastern Virginia and northeastern North Carolina (Neill 1971). The southern extent of its historic range in Texas and possibly northeastern Mexico is unknown; however, records Exist from the Rio Grande River, indicating the possibility that it once ranged into the extensive aquatic habitats of northeastern Tamaulipas, Mexico.

*Population estimates and trends*

From the late 1940's throught he mid 1960's, alligator populations declined sharply from hunting and hibitat loss. Chabreck (1967) estimated that between the late 1940's and late 1950's populations in Louisiana decline 90%. Since the 1960's, state and federal protection has generally reversed population decline, and alligators are now stabilized or increasing in numbers in most areas throughout their range.

In 1973, ten states reported alligators present (Joanen 1974): North Carolina—1,314; South Carolina—48,700; Florida—407,585; Georgia—29,954; Alabama—12,715; Mississippi—4,740; Oklahoma—10; Arkansas—1,900; Louisiana—200,682; and Texas—26,784. A total of 734,384 alligators were reported, occupying approximately 45,000 square miles of available alligator habitat. Joanen's report suggested an overall increasing population trend.

In Florida, Joanen reported that alligators were present in every county responding to a questionnaire. No population trend estimates were given except to note that, in general, peninsular Florida, roughly south of the Suwannee River region, supports moderate to large alligator populations that are increasing or remaining stable, except in centers of intensive development. The panhandle of the State was reported to support less dense populations with local pockets of abundance.

In Louisiana, Joanen stated that 63 parishes reported the presence of alligators. Forty parishes reported increasing populations and 22 reported stable populations. The extensive coastal marshes of southern Louisiana were considered to support the largest alligator populations anywhere in the species' range, although some local populations elsewhere (Okefenokee Swamp, Georgia, for example) apparently may equal the density found in this area. The situation in the northern parishes, which have few marshes, is less clear, but numbers there are low.

*Reproduction*

Reproductive behavior begins with bellowing by both males and females, usually in early spring, March to April, depending on local climate. The bellow may serve both as a territorial signal and as a component of the male-female interaction, but data are not yet available to fully document its function (Campbell 1973; Herzog 1974; Garrick and Lang 1977).

Copulation takes place in the water (McIlhenny 1935; Joanen 1969). Nest construction and egg-laying takes place in May–June, depending on local climate; and the eggs hatch in August–September (Kellogg 1929; McIlhenny 1935; Joanen 1969; Neill 1971). Clutch size varies from about 20–60 eggs.

At least some females are protective of the nest and remain near for the entire incubation period. After a period of about 9 weeks the eggs hatch and the 9-inch long young are freed from the nest by the female. Hatching young are very vocal and their high-pitched "umph, umph" calls may stimulate the female to open the nest. The young often remain together in a group called a "pod" for the remainder of the summer (McIlhenny 1935; Campbell 1973; McNease and Joanen 1974). Tagged young have been recaptured near the nest site as long as three years after hatching (McIlhenny 1935; Joanen 1969; Campbell 1973; McNease and Joanen 1974; Metzen 1977).

Survivorship of the young is unknown, except in local situations, but is expected to be low in mature populations and higher in depleted populations. Variations in water levels appear to be the major limiting factor on nesting success (Hines et al. 1968; Joanen 1969; Nichols et al. 1976). Growth rates of the young vary widely but may approach one foot per year with optimal habitat and food availability (Joanen and McNease 1975; McIlhenny 1935). Juveniles often remain together in loosely associated groups until about 1 m long.

*Domestic and international demand*

Current domestic commercial utilization of alligators is limited to those bred in captivity, taken during limited open seasons in Louisiana, or taken by state agents in Florida. From 1,300 to 6,000 hides are estimated to have entered legal domestic commerce annually since 1972. No legal commercial export has been allowed for wild-caught alligators since the U.S. Endangered Species Act was enacted in 1973. Presently, one tanner processes almost all alligator hides used commercially in the United States. Apparently, most hides are used to manufacture boots sold in the western United States.

There is no doubt that alligator hides presently are worth more if they can be exported. For example, at a 1978 sale in Florida, 1500 hides that could not be exported sold for about $9.00 per foot, whereas farmed hides that were eligible for export sold at about $18.00 per foot.

*Consequences of No Export*

This alternative extreme is the status quo: only captive-bred hides could be exported commercially. This situation has good and bad elements for alligator conservation. Enforcement of federal trade restrictions is simplified by a complete prohibition on export, and there is a diminished commercial incentive for harvest—a significant factor in the original decline of the alligator.

Perhaps the most significant positive consequence of no export concerns the potential adverse effect of American alligator export on other species of crocodilians protected by the CITES. It is possible that exportation of American alligator hides may stimulate capture of other crocodilians for commercial purposes—both because illegally traded crocodilian hides may be confused with and pass for legally traded alligator hides and because trade in alligator hides may stimulate the overall market for crocodilian hides.

Failure to approve any export of wild-caught American alligators also may have negative consequences for alligator conservation. The states of Louisiana and Florida have stated that their programs for alligator research and management may be jeopardized unless the species has economic value. Analogously, these states have stated that landowners may drain and use alligator habitat for other purposes, rather than preserve it, if they cannot profit from the species' presence. These problems may be compounded both because large alligators can be dangerous to man and because about half of the alligator's diet in coastal Louisiana consists of nutria, valued for its fur in that state.

*Consequences of Export Without Restriction by the ESSA*

Commercial export of American alligators without restriction by the ESSA might in some respects be better for the alligator than an export prohibition. Given the higher price for hides in foreign markets, permitting export increases the economic value of the alligator in the United States. As stated above, this higher value may be critical to funding of state alligator conservation programs, and may disincline landowners from destroying alligator habitat. On the other hand, state programs might remain adequate without such additional support, and land development on the whole may not be closely related to the price of alligators.

Because of state harvest controls and domestic federal harvest controls under the Endangered Species Act, there are certain assurances independent of the CITES that harvest will not be detrimental. Annual ESSA review of the biology and management of the alligator reinforces these controls.

In our view, a major potential negative impact of allowing export without restriction is the effect that international commerce in American alligator hides may have on other crocodilian species protected by the CITES. The effect, if any, is essentially unknown at this time. However, there is a real danger of confusing alligator hide with hide of other crocodilians, especially in products. Consequently, enforcing trade restrictions for other crocodilians is made more difficult if export of American alligator is permitted. For this reason, we are proposing conditions on alligator export to facilitate law enforcement. We are also proposing to restrict export to CITES Parties without reservations for crocodilians, in order to prevent supply of American alligator hides to markets in countries that have not fully accepted the CITES obligations to conserve crocodilians. Even if these conditions were not imposed, however, the implications of allowing or disallowing alligator export are so uncertain that we do not believe choosing one course or the other requires a step great enough to encompass a major Federal action significantly affecting the quality of the human environment.

**Guidelines for ESSA Findings on Export**

*Article II 2(a)*

In our notice of April 30, 1979 (44 FR 25383), we suggested that the guidelines published on April 10, 1978 (43 FR 15097), for findings under Article II 2(a) concerning commercial export of bobcat, lynx and river otter would also be generally applicable to commercial export of American alligators harvested in 1979, pending possible adoption of revised interpretations in procedural regulations. Such determinations include an assessment both of the species' biological status and of management controls.

*Article II 2(b)*

The general problems to be addressed concerning potential detriment to other associated species have also been discussed in the April 30 **Federal Register** notice. The two major concerns which must be satisfied are (1) that specimens of the exported species must be sufficiently distinguishable from specimens of the other similar species protected by the CITES to prevent a detrimental confusion in trade, and (2) that trade in this species does not stimulate trade in similar protected species which would be detrimental to those species. Application of these standards to commercial export of American alligator will be discussed below in the findings.

**ESSA Proposed Finding Under Article II 2(a)**

Because Louisiana and Florida are the only states which allows a harvest that may be commercially exported, the ESSA's proposed findings focus on those two states. The general status of the species throughout the remainder of its range has been addressed in the environmental assessment above.

*Proposed Finding Under Article II 2(a)*

The Endangered Species Scientific Authority proposes to find that commercial export of certain hides of *Alligator mississippiensis* will not be detrimental to the survival of that species. This proposed finding would apply only (a) to hides legally taken in the 1979 season in the areas of Louisiana where the U.S. Fish and Wildlife Service classifies the species as T(S/A) under the Endangered Species Act of 1973 and (b) to hides taken in Florida on or after June 28, 1979, by state agents under the State's nuisance control program. In addition, this proposed finding would be subject to a positive finding under Article II 2(b), and to fulfillment of conditions set forth below.

*Grounds for the proposed finding under Article II 2(a)*

Recent research on the species in both states as well as significant new management initiative provide assurance that export under present conditions will not be detrimental to those populations. We list here several of the principal factors leading to our proposed finding; additional information is contained in the documents listed in the reference section.

*General*

1. Excessive harvest is considered to be a major factor in the original decline of this species, especially from the late 1940's into the early or middle 1960's. These declines, however, occurred during a period when minimal research and management attention was directed to the species. Neither state nor federal laws were adequate to control overharvest or illegal trade. Since that time, increased public awareness has resulted in improved laws and enforcement at both levels. Within the past 10–15 years, reserach has produced a significant body of new information on which sound management can be based. As a result of these developments, the potential for effective control is notably improved as compared to the period when the decline of this species occurred.

2. Domestic trade in American alligators within the United States has come under increased federal control. One provision of the Endangered Species Conservation Act of 1969 was an amendment to the Lacey act prohibiting interstate and foreign trade in illegally taken wild reptiles. This provision, enacted with alligators in mind, has proved useful in reinforcing state laws for the species. In addition, regulations under the Endangered Species Act of 1973 (50 CFR 17.42) regulate where alligators may be harvested, require licenses of all buyers, tanners, and fabrictors of alligator hides, and detail marking, transportation and record-keeping requirements. These regulations are currently under review (43 FR 45513 and 44 FR 27199), including consideration of their extension to potential foreign buyers, tanners, and fabricators.

3. The species has responded well to improved protection. Although there are still some populations which have not totally recovered, especially on the periphery of the species' distribution, its recovery in much of the range has been rapid.

*Louisiana*

1. In the coastal marsh zone of Louisiana, annual aerial surveys of nesting have been conducted since 1970. These surveys have demonstrated a large and increasing population during that time. Some of the largest increases have occurred in the parishes where controlled harvests (for domestic sale) have been conducted.

2. In five of the years from 1972 through 1977, hunts have been conducted under the control of the Louisiana Department of Wildlife and Fisheries. These harvests have removed from 1350 to about 5500 alligators in each year from certain parishes in southwestern Louisiana. The surveys have continued to find growing populations in those parishes.

3. State harvest regulations incorporate many features to avoid adverse impact, including:

(a) Hunting is only allowed on land owned or leased by the hunter. A limited quota of tags is issued to the hunter based on an assessment by state

biologists of the area of different habitats on that land and of densities found on each habitat type in the area.

(b) Harvest rates used in setting quotas are based conservatively on know reproductive and growth rates for the populations. A population model has been derived which simulates alternative harvest strategies and suggests areas for further research. Rates are adjusted annually by parish and habitat type based on the annual nesting surveys and other data.

(c) The season is set for September, and hunting is restricted to open water. These restrictions favor taking large males, for females at the time are found mostly in shallower areas of the marsh. Also, hatching has occurred, and females will have opened the nests to release the young. As a result, it females are taken at that time, the effect on their offspring is reduced.

(d) "Pole-hunting" is prohibited. This method uses poles to remove animals from shallow dens, and would produce mostly females. This regulation also protects breeding size females.

(e) The issuance of a limited number of tags also encourages the taking of males because they reach much larger sizes, which bring more money. Alligator populations tend to have a larger proportion of males (about 60%), but a single male may mate with several females. Harvests have consisted of 66–86% males.

(f) The minimum allowable size is four feet in length.

4. Harvest regulations also include a number of measures which help insure that legally taken hides can be identified and reduce the incidence of illegal activities:

(a) Tags are serially numbered and are registered when issued to the hunters. All tags must be accounted for at the end of the season, and unused tags are returned to state agents for destruction. No substitute tags are issued for lost tags.

(b) Specialized and varying skinning instructions are issued at the start of the season to prevent tags being applied to skins taken prior to the season. Skins not meeting these specifications are confiscated.

(c) Prior to sale, skins are registered by size, tag number, and trapper. State agents remove a stub from the trapper's tags, and attach a validation tag.

(d) Shipment and sale of hides within the state is controlled by licensing of buyers and dealers, registration of shipments, and attachment of identifying labels to containers.

(e) Legal hunting is restricted to daytime, which facilitates enforcement of regulations on taking.

5. The average size of animals harvested from the wild has been increasing since the season of 1972. Although this may reflect either increasing skill of hunters in taking larger animals or increasing size of animals in the source population, it suggests at minimum that the population is not being impacted seriously by the harvest as presently conducted, especially when considered with the increasing population found in annual nest surveys.

*Florida*

1. Florida's situation is rather different. There is no regular season, and the only legal harvest is of "nuisance" animals taken by designated state agents.

2. The state has been conducting annual spotlight surveys of selected transects at various sites in the state since 1974. (The primary alligator habitats in Florida are not amenable to aerial nest counts as used in Louisana.) Because dispersion of alligators can vary greatly depending on water level, influencing the results of spotlight surveys, trends are less clearly identified than in Louisiana. The 1977 survey was taken during a year of especially low water, which probably resulted in counts that were artificially high on the survey routes. If that year is ignored, the remaining surveys suggest at least a stable and possibly increasing population level, and reflect the species' presence in some numbers in many areas of the state. Research has been conducted on sources of variation in spotlight counts, and ways are being sought to improve their interpretation.

3. Florida contains 4,170 square miles of alligator habitat (7.1% of the state's area) where the species is totally protected and will not be taken under the nuisance control program. These areas include much of the prime breeding habitat in the state.

4. Increasing numbers of complaints have been received concerning interactions between alligators and humans. This may suggest an increasing alligator population, but may also reflect the increasing human populations in Florida, with increasing construction in or near alligator habitat; improved reporting and recording of complaints; and possibly a reduced fear of man by alligators which are not hunted.

5. The nuisance control program is designed to remove only problem animals and to minimize the effect on the breeding population. The present program replaces a previous system of relocating problem animals. The latter was ineffective, largely because of the time, difficulty, and cost of capturing and transporting large alligators as well as the tendency of these alligators to return to the site of capture.

The current program has trapper/agents operating under the supervision of state biologists, and contains a number of controls designed to protect the alligator population, including:

a. Trappers are selected by the state and are assigned a specific territory. They can be removed if their activities do not meet strict standards.

b. Complaints are received by the state, and are screened by state biologists, either by telephone or in the field, to ensure that the complaint is valid. Only after screening is a tag or tags issued to the trappers for use on the specific animal or animals. As desribed for Louisiana, varying skinning instructions help prevent stockpiling of illegal hides. Follow-up checks are made to be sure the correct animal was taken.

c. Numbered tags are issued only for the taking of alligators which, in the biologist's opinion, constitute genuine threats.

Tags are not issued for animals under four feet in length. Careful records are maintained of all tags issued, and unused tags must be returned and are destroyed.

d. As in Louisiana, adult males spend more time in open water, where most human activities occur, and this has resulted in a take heavily biased toward males. Nesting areas, where females spend more time, are more remote, which protects the breeding potential.

e. Detailed records are maintained of the number of animals taken in specific areas.

f. Following skinning and tagging by the trapper, hides are turned over to the state, which records the hides and marks them with a second numbered tag. The state retains the hides until sale at auction. Part of the proceeds is returned to the trapper, and part is retained to help finance the state's alligator program.

g. Areas subject to nuisance control are spot-checked to ensure that excessive numbers are not being removed.

**ESSA Proposed Finding Under Article II 2(b)**

*Proposed Finding Under Article II 2(b)*

The Endangered Species Scientific Authority proposes to find that export of certain hides of *Alligator mississippiensis* will not be detrimental

to the survival of other species of crocodilians. This proposed finding would apply only (a) to hides legally taken in the 1979 season in the areas of Louisiana where the U.S. Fish and Wildlife Service classifies the species as T(S/A) under the Endangered Species Act of 1973 and (b) to hides taken in Florida on or after June 28, 1979, by state agents under the state's nuisance control program. In addition this finding would be subject to the conditions that:

(a) Foreign buyers, tanners, and fabricators must be subject to licensing requirements similar to those currently in force within the United States (50 CFR 17.42; see also 43 FR 45513, Oct. 2, 1978, and 44 FR 27199, May 9, 1979). Licensees must provide access to their records and may sell to other buyers, tanners or fabricators only if these hold federal licenses; fabricators must permanently mark all products to indicate that they are alligator.

(b) Exports must only be allowed to licensed buyers, tanners or fabricators located in countries which have ratified the CITES and which have not taken reservations for any crocodilians. At this time, these contries include only the following: Australia, Brazil, Canada, Chile, Costa Rica, Cyprus, Denmark, Ecuador, Egypt, Federal Republic of Germany, Finland, Gambia, German Democratic Republic, Ghana, Guyana, India, Indonesia, Iran, Jordan, Kenya, Madagascar, Malaysia, Mauritius, Monaco, Morocco, Nepal, Nicaragua, Niger, Nigeria, Norway, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Senegal, Seychelles, South Aftrica, Sri Lanka, Sweden, Switzerland, Tunisia, Union of Soviet Socialist Republics, United Arab Emirates, United Kingdom (and territories), United States, Uruguay, Venezuela, Zaire.

(c) Prior to export, all hides must be indelibly marked over their entire reverse surface with identifying symbols. At this time there are only a few companies in the United States that tan alligator hides, and to our knowledge only the Fouke Company, in South Carolina, currently marks alligator hides in this manner. However, we understand that this marking process is available to other tanners.

*Grounds for the Proposed Finding Under Article II 2(b)*

Because the question of threat to other similar species is one which deals with the whole species, discussion of individual states' management will not be repeated here from the preceding section. As discussed in the guidelines above, and in the **Federal Register** of April 30, 1979 (44 FR 25383), the two primary issues to be dealt with here involve identification and possible stimulation of trade in similar species.

*Identification*

We must be assured that the alligators exported will be only taken in areas where harvest for potential export is allowed. This is an obligation of the Management Authority pursuant to Article IV 2(b) of the CITES, as well as our concern. We have described above the tagging procedures for the involved states, and anticipate that those, together with federal requirements, will be the primary vehicles for carrying out this responsibility. Both states apparently account for all tags ordered and purchased, but there have been unsupported allegations that counterfeit tags are available; we request the Management Authority to proceed with care in fulfilling this requirement of our approval, particularly because there are no recognized subspecies of American alligator, and we know of no unequivocal way to distinguish morphologically between specimens from different parts of the species' distribution.

Complete hides of American alligator and products incorporating its ventral (belly) skin can be distinguished from those of other crocodilians (King and Brazaitis, 1971). The square ventral scales of alligators have a smooth surface and lack features seen on those of crocodiles, gharials and caimans. Crocodiles and gharials have on each ventral scale a clearly visible follicle gland or pore which is missing from alligators and caimans.

Caiman species all have double osteoderms (bony buttons) underlying the ventral scales, although these may be limited to the midline scales of *Melanosuchus niger*. These osteoderms can be seen from the inside of the hide, or are evident on the surface of finished skins as a pitting, wrinkling, or discoloration. Contrary to previously published information, *Alligator sinensis*, the Chinese alligator, frequently has single osteoderms, and may be separable from *A. mississippiensis* by that feature (F. W. King, personal communication). In addition, *A. sinensis* is in low numbers, *sinensis*, the Chinese alligator. The latter species is in low numbers, has a restricted distribution, and is rigidly protected by the Chinese government (King & Brazaitis, 1971). Its occurrence in trade is sufficiently unlikely that trade in American alligator could not be expected to affect it.

Identification of other hide parts is more difficult, and may be impossible for small pieces, which are used for manufacture of watch bands and other small articles. In international trade this would most likely be a problem on re-import of pieces or products or on their transfer between other countries. The U.S. Fish and Wildlife Service has proposed to limit intestate commerce in American alligator hides to those that have been marked over the entire reverse of the hide with identifying symbols (43 FR 45513, October 2, 1978, proposed amendment 12 of § 17.42). Applying this requirement to exported hides should significantly reduce problems of identification.

The U.S. Fish and Wildlife Service has given notice that it is considering extending to foreign buyers, tanners, and fabricators of alligator hides the current domestic requirement (50 CFR 17.42) that these individuals and companies be licensed by the Fish and Wildlife Service (44 FR 27199, May 9, 1979). This requirement would substantially lessen concern for the effect that trade in American alligators may have on other crocodilian species.

A general weakness in the control of the crocodilian trade lies in countries which have not ratified the CITES; contributing alligators to the crocodilian products industry in these countries may help perpetuate a drain on endangeed populations. This would seem undesirable even if the contribution is incremental. In addition, these countries are the most likely sites for commingling of endangered crocodilian species with legally taken and exported skins of American alligator. Non-Parties include several countries that are major processors or shippers of reptilian leathers, such as Japan, Italy, Singapore and Spain. In addition, France ratified the CITES, but took reservations on four species of crocodilians which are included in Appendix I: *Melanosuchus niger, Corcodylus cataphractus, C. niloticus* and *Osteolaemus tetraspis*. Botswana, which in the past exported quantities of *C. niloticus*, has taken a reservation for that species.

Finally, the question of possible stimulation of trade in other crocodilian species has been raised. A detailed study of this question would require considerably more data than are available. However, a comparison can be made of relative volumes of hides in trade. The IUCN TRAFFIC group (Burton and Inskipp 1979) estimated worldwide trade of 2,000,000 crocodilian skins in 1976, with 500,000 going to France alone and 350,000 to West Germany. No more than 10,000 hides of American alligator might be exported from the U.S. in 1979. This apparently

would represent less than one percent of the world market in crocodilian hides. Alligator is one of the more valuable crocodilian leathers, but its export may not significantly affect such a large market.


Anonymous. 1978. Procedure for implementation of the nuisance alligator program. Unpubl. Draft ms., Florida Game and Freshwater Fish Commission. 18 pp.

Brantly, R. M. 1978. Letter and petition by state of Florida to transfer American alligator to Appendix II. Addressed to Lynn A. Greenwalt, Director, U.S. Fish and Wildlife Service. April 11. 23 pp. plus attachments.

Brantly, R. M. 1979. Letter to L. A. Greenwalt, Jan. 15.

Brazaitis, P. 1973. The identification of living crocodilians. Zoologica, 58:59–101.

Burton, J. and T. Inskipp. 1979 Earthscan briefing document 16, Chapter 5. The wildlife trade. Prepared for Earthscan by IUCN TRAFFIC group London.

Campbell, H. W. 1973. Observations on the acoustic behavior of crocodilians. Zoologica. 58:1–10.

Campbell, H. W. 1979. Letter to W. Y. Brown, for IUCN Crocodile Specialist Group. Feb. 23.

Chabreck, R. H. 1966. Methods of determining the size and composition of alligator populations in Louisiana. Proc. Ann . Conf. S.E. Assoc. Game Fish Comm., 20:105–112.

Chabreck, R. H. 1967. The American alligator: Past, present and future. Proc. Ann. Conf. and S.E. Assoc. Game Fish Comm., 21:554–558.

Chabreck, R. H. 1975. Cooperative surveys of the American alligator in the southeastern United States during 1974. Unpubl. ms., Louisiana State University.

Chabreck, R. H. and T. Joanen. 1979. Growth rates of American alligators in Louisiana. Herpetologica, 35:51–57.

Cockerham, L. S. 1978. Public relations aspectes of alligator management in Florida. Unpubl. ms Univ. Florida, School of Forest Resources and Conservation. 60 pp.

Coulson, T. D., R. A. Coulson, and T. Hernandez. 1973. Some observations on the growth of captive alligators. Zoologica, 58:47–52.

Deitz, D. C. & T. C. Hines. 1978. Alligator nesting in north-central Florida. Unpubl, ms. Florida Game and Freshwater Fish Commission. 31 pp.

Fogarty, M. J. 1974. The ecology of the Everglades alligator. In P. J. Gleason, Ed., Environments of South Florida: Past and Present. Mem. Miami Geol. Survey 2. 482 pp.

Garrick, L. D. and J. W. Lang. 1977. Social signals and behaviors of adult alligators and crocodiles. Am. Zool., 17:225–239.

Goodwin, T. 1978. Use of radio telemetry for tracking alligators. Florida Wildlife, 32(1): 14–15.

Herzog, H. A., Jr. 1974. The vocal communication system and related behaviors of the American alligator (*Alligator mississippiensis*) and other crocodilians. Unpubl. M.S. Thesis, Univ. Tennessee, Knoxville, 87 pp.

Hines, T. C. 1978. Florida alligator population survey, 1978. Unpubl. ms. Florida Game and Freshwater Fish Commission. 6 pp.

Hines, T. C., M. J. Fogarty, and L. C. Chappell. 1968. Alligator research in Flordia: a progress report. Proc. Ann. Conf. S.E. Assoc. Game Fish Comm., 22:166–180.

Hines, T. C. and T. M. Goodwin. 1977. Florida alligator population survey, 1977. Unpubl. ms. Florida Game and Freshwater Fish Commission. 8 pp.

Hines, T. C. and A. R. Woodward. 19778. A final report on the 1977 alligator pilot program. Unpubl. ms. Florida Game and Freshwater Fish Commission. 42 pp. (including tables and attachments).

IUCN. 1971–72. Crocodiles: Proceedings of the first working meeting of crocodile specialists. IUCN Pub. New Series. Suppl. Pap. No. 32 (vol. 1), Suppl. Pap. No. 33 (vol. 2).

IUCN. 1973. Crocodiles: Proceedings of the second working meeting of crocodile specialists. IUCN Pub. New Series, Suppl. Pap. No. 41.

Joanen, T. 1969. Nesting ecology of alligators in Louisiana. Proc. Ann. Conf. S.E. Assoc. Game Fish Comm., 23:141–151.

Joanen. T. 1974. Population status and distribution of alligators in the southeastern United States. Unpubl. ms., presented at Southeastern Regional End. Spp. Workshop, Wildlife Society, Tallahassee, Fla. Sept., 1974.

Joanen, T. and L. McNease. 1970. A telemetric study of nesting female alligators on Rockefeller Refuge, Louisiana. Proc. Ann. Conf. S.E. Assoc. Game Fish Comm., 24:175–193.

Joanen. T. and L. McNease. 1971. Propagation of the American alligator in captivity. Proc. Ann. Conf. S.E. Assoc. Game Fish Comm., 25:106–116.

Joanen, T. and L. McNease. 1972. A telemetric study of adult male alligators on Rockefeller Refuge. Lousisiana. Proc. Ann. Conf. S.E. Assoc. Game Fish Comm., 26:252–275.

Joanen, T. and L. McNease. 1975. Notes on the reproductive biology and captive propagation of the American alligator. Proc. Ann. Conf. S.E. Assoc. Game Fish Comm., 29:407–415.

Joanen, T. and L. McNease. 1976a. Culture of immature American alligators in controlled environmental chambers. Proc. 7th Annual Meeting, World Mariculture Society. pp. 201–211.

Joanen, T. and L. McNease. 1976b. Louisiana's experimental alligator harvest program. Unpubl. ms., presented at IUCN–SSC Crocodile Specialist Group meeting, Maningrida, Australia, April.

Joanen, T. and L. McNease. 1977a. Artificial incubation of alligator eggs and post hatching culture in controlled environmental chambers. Proc. 8th Annual Meeting, World Mariculture Society. pp. 483–490.

Joanen, T. and L. McNease. 1977b. Effects of simulated flooding on alligator eggs. Unpubl. ms., presented at 31st annual meeting, S.E. Assoc. of Fish and Wildlife Agencies, Oct. 9–12. 7 pp.

Joanen, T. and L. McNease. 1978a. Reproductive biology of the American alligator in southwest Louisiana. Unpubl. ms. Paper presented at SSAR Symposium on Reproductive Bioloy of Captive Reptiles, June 5–6. 16 pp.

Joanen, T. and L. McNease. 1978b. The cloaca sexing method for immature alligators, Unpubl. ms., presented at 32nd annual meeting, S.E. Assoc. of Fish and Wildlife agencies, Nov. 5–8. 7 pp.

Joanen, T. and L. McNease. 1978c. Status of Louisiana alligator farm program. Unpubl. ms., presented at IUCN–SSC Crocodile Specialist Group meeting, Madras, India, February.

Joanen, T., L. McNease, and G. Linscombe. 1974. An analysis of Louisiana's 1973 experimental alligator harvest program. Unpubl. job completion report. Louisiana Wildlife and Fisheries Commission.

Joanen, T., L. McNease, and G. Linscombe. 1975. Preliminary results of Louisiana's experimental alligator harvest program—1975. Unpubl. progress report, Louisiana Wildlife and Fisheries Commission, Refuge. Division.

Joanen, T., L. McNease, and G. Linscombe. 1976. Preliminary results of Louisiana's alligator harvest program—1976. Unpubl. progress report, Louisiana Wildlife and Fisheries Commission, Refuge Division.

Joanen, T., L. McNease, and G. Linscombe. 1977. Preliminary results of Louisiana's alligator harvest program—1977. Unpubl. progress report, Louisiana Department of Wildlife and Fisheries, Refuge Division.

Joanen, T., L. McNease, and G. Perry. 1977. Effects of simulated flooding on alligator eggs. Unpubl. ms., presented at 31st annual meeting, S. E. Assoc. Game Fish Comm., San Antonio, Texas, Oct. 9–12.

Kellogg, R. 1929. The habits and economic importance of alligators. U.S. Dept. Agric. Tech. Bull. 147. 36 pp.

King, F. W. and P. Brazaitis. 1971. Species identification of commercial crocodilian skins. Zoologica, 56:15–75.

Louisiana Department of Wildlife and Fisheries. 1978. Proposal to reclassify the American alligator form Appendix I to Appendix II. Submitted to U.S. Fish and Wildlife Service.

Mellhenny, E. A. 1935. The alligator's life history. Christopher Publ. House, Boston. 116 pp.

McNease, L. and T. Joanen. 1974. A study of immature alligators on Rockefeller Refuge, Louisiana. Proc. Ann. Conf. S.E. Assoc. Game Fish Comm., 28:482–500.

McNease, L. and T. Joanen. 1977. Alligator diets in relation to marsh salinity. Unpubl. ms., presented at 31st Annual Meeting, S.E. Assoc. Game and Fish Comm., October 9–12. 15 pp.

McNease, L. and T. Joanen. 1978. Distribution and relative abundance of the alligator in Louisiana coastal marshes. Unpubl. ms., presented at 32nd annual meeting, S.E. Assoc. Fish and Wildlife Agencies, November 5–8. 12 pp.

Metzen, W. D. 1977. Nesting ecology of alligators on the Okefenokee National Wildlife Refuge. Proc. Ann. Conf. S.E. Assoc. Game Fish Comm., 31.

Neil, W. T. 1971. The last of the ruling reptiles: alligators, crocodiles, and their kin. Columbia Univ. Press, New York. 486 pp.
Nichols, J. O., L. Viehman, R. H. Chabreck and B. Fenderson. 1976. Simulation of a commercially harvested alligator population in Louisiana. Louisiana Agric. Exp. Stn. Bull. 691. 59 pp.
Palmisano, A. W., T. Joanen, and L. McNease. 1973. An analysis of Louisiana's 1972 experimental alligator harvest program. Proc. Ann. Conf. S.E. Assoc. Game Fish Comm., 27:184–206.
Schortemeyer, J. L. 1972. Destruction of alligator habitat in Florida. Unpubl. ms. Paper presented at American Alligator Council Symposium, Lake Charles, La., May 4–5. 14 pp.
Taylor, D., T. Joanen, and L. McNease. 1976. A comparison of native and introduced immature alligators in northeast Louisiana. Unpubl. ms., presented at 30th annual meeting, S.E. Assoc. Game Fish Comm., October. 25 pp.
Woodward, A. R. 1978. Are alligators dangerous? Unpubl. ms. Florida Game and Freshwater Fish Commission. 8 pp.
Woodward, A. R. 1978. An evaluation of factors affecting night-light counts of alligators. Unpubl. M. S. thesis, Univ. Florida, Gainesville. 82 pp.

**Proposed Regulations Promulgation**

Accordingly, it is hereby proposed to amend Part 810, Chapter VIII, Title 50 of the Code of Federal Regulations. An annex shall be added and is proposed to read as follows:

**Annex B—American alligator**

*States for which the ESSA has found that export of the indicated season's harvest will not be detrimental to the survival of the species.*

*1979 Harvest (taken after June 28):* Florida, Louisiana. *Conditions on finding:* (a) Foreign buyers, tanners and fabricators must be subject to licensing requirements similar to those currently in force within the United States (50 CFR 17.42; see also 43 FR 45513, Oct. 2, 1978, and 44 FR 27199, May 9, 1979). Licensees must provide access to their records and may sell to other buyers, tanners or fabricators only if these hold federal licenses; fabricators must permanently mark all products to indicate that they are alligator; (b) Exports must only be allowed to licensed buyers, tanners or fabricators located in countries which have ratified the CITES and which have not taken reservations for any crocodilians; (c) Prior to export, all hides must be indelibly marked over their entire reverse surface with identifying symbols. *For further information:* see 44 FR [insert pages of this notice], [insert date of this notice].

Publication of these findings has been approved by the Members of the Endangered Species Scientific Authority.

Dated: May 25, 1979.

**William Y. Brown,**

*Executive Secretary.*

[FR Doc. 79-16961 Filed 5-30-79; 8:45 am]
BILLING CODE 4310-55-M