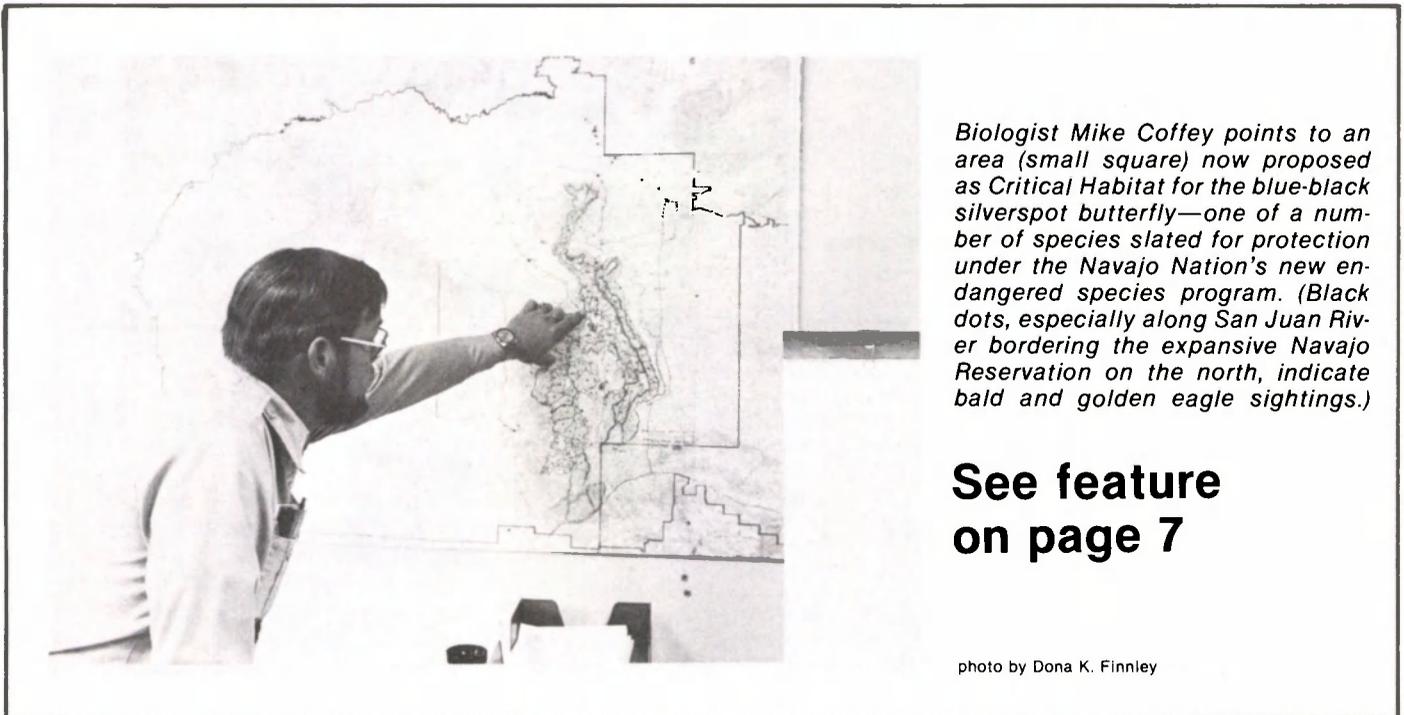




ENDANGERED SPECIES TECHNICAL BULLETIN

Department of the Interior • U.S. Fish and Wildlife Service • Endangered Species Program, Washington, D.C. 20240



Biologist Mike Coffey points to an area (small square) now proposed as Critical Habitat for the blue-black silverspot butterfly—one of a number of species slated for protection under the Navajo Nation's new endangered species program. (Black dots, especially along San Juan River bordering the expansive Navajo Reservation on the north, indicate bald and golden eagle sightings.)

**See feature
on page 7**

photo by Dona K. Finnley

SERVICE RELAXES STATE ELIGIBILITY FOR COOPERATIVE AGREEMENTS

The Service has finalized new regulations concerning State cooperative agreements under the Endangered Species Act of 1973—a measure which eases eligibility requirements for States wishing to receive Federal grant-in-aid funds for the conservation of their endangered and threatened species (F.R. 5/31/79).

Service action was prompted by two amendments to the Endangered Species Act—one signed by President Carter on December 19, 1977, providing an alternative set of requirements under which States may qualify for cooperative agreements with the Service, and another contained in the comprehensive Endangered Species Act Amendments of 1978, providing for co-

operative agreements to conserve protected plants.

As called for under the 1977 amendment (which also extended authoriza-

tion for appropriations under Section 6 of the 1973 Act), the Service had proposed regulations (F.R. 8/30/78) to

Continued on page 4

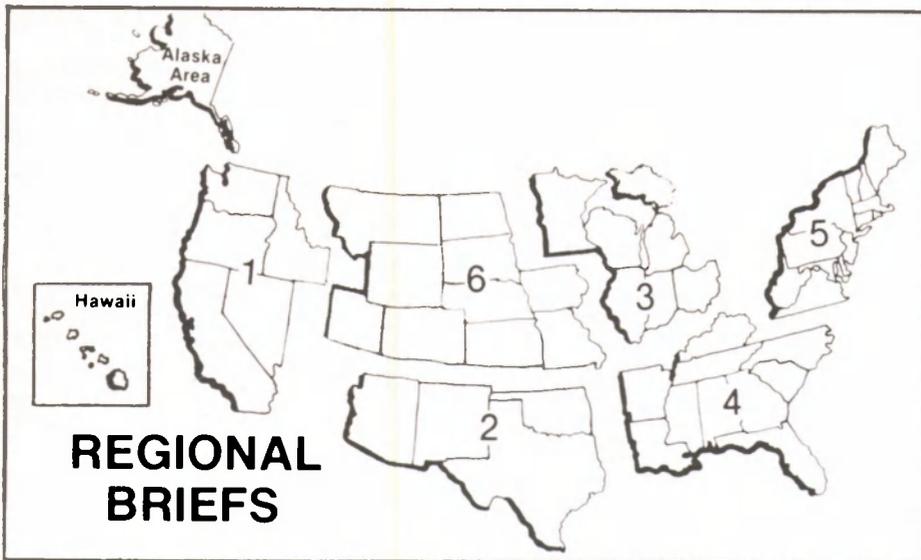
STATUS OF SPECIES LISTED PRIOR TO 1975 UNDER REVIEW

In line with 1978 amendments to the Endangered Species Act, the Service is conducting a review of all Endangered and Threatened species listed prior to 1975 to ensure that their present classification reflects their true status in the wild (F.R. 5/21/79).

As provided under amendments signed by President Carter on November 10, 1978, the Service must conduct

a review of each listed species at least once every five years. Of the 696 native and foreign species currently on the U.S. List of Endangered and Threatened Wildlife and Plants, 382 are the subjects of this review. (Species that have been affected by reclassifications for all or significant parts of their populations since 1975 are not included.)

Continued on page 4



REGIONAL BRIEFS

Endangered Species Program regional staffers have reported the following activities for the month of May.

Region 1. An effort to improve habitat for Endangered Hawaiian waterbirds at Hanalei National Wildlife Refuge, through vegetation clearing,

is about 60 percent complete. Clearing is confined until a surface archaeological survey has been made. Upon completion of this survey, a survey on the proposed route for the Hanalei water delivery system will begin. Also on Hanalei, eight gallinule (*Gallinula chloropus sandvicensis*) nests were

found, as were the first stilt (*Himantopus himantopus knudseni*) nests of the season.

On Oahu, 93 stilts have been color banded for research on the species' reproductive biology. Forty-four new stilt nests were located and are being observed.

Marabilis macfarlanei has been relocated in the Snake River Canyon on the Oregon-Idaho border. The entire distribution of this species, which may be recommended for listing, consists of 20 plants at two locations. Several of the plants appear diseased and are further threatened by collectors.

Region 2. The Point Defiance Zoological Park in Tacoma, Washington, reported the birth of 26 red wolves (*Canis rufus*), 15 of which survived. Four of these are being hand-reared. A current status summary for the species has been completed and will be published in the near future.

The Service has registered in the American Association of Zoological Parks and Aquariums' ISIS program (International Species Inventory System) for the red wolf. Each animal is assigned a unique number by ISIS based on taxonomic grouping and the

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U.S. Fish and Wildlife Service Regions

Region 1: California, Hawaii, Idaho, Nevada, Oregon, Washington, and Pacific Trust Territories. **Region 2:** Arizona, New Mexico, Oklahoma, and Texas. **Region 3:** Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. **Region 4:** Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Puerto Rico, and the Virgin Islands. **Region 5:** Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia and West Virginia. **Region 6:** Colorado, Iowa, Kansas, Missouri, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. **Alaska Area:** Alaska.

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REGULATIONS

The Service has proposed regulations to relax the restrictions on activities concerning captive wildlife because current regulations tend to hinder propagation efforts. The proposal would grant general permission to the public to take, engage in interstate or foreign commerce, and conduct certain other prohibited activities (under the Endangered Species Act) with captive-bred wildlife, provided these activities are conducted to enhance the propagation or survival of the species.

The regulations would apply only to exotic species and native U.S. species sufficiently protected in the wild, and would require permittees to register and report activities to the Service.

When the Endangered Species Act and implementing regulations were first put into effect, many routine activities involving captive propagation of Endangered and Threatened species were prohibited and could only be authorized by permit. This brought complaints of newly created legal problems from circuses and animal dealers as well as from zoos and breeders of cats, pheasants, waterfowl, and other animals. They argued that they owned the animals in question and that what they did with them in cap-

institution in which it is housed. ISIS provides three annual reports (*Species Distribution Report*, *Inventory Report*, and *Acquisition/Release Report*) for the purpose of maintaining up-to-date records on the numbers, distribution, and types of specimens in zoos worldwide.

Region 3. Several Service representatives attended the Upper Mississippi River Conservation Committee Symposium on Bivalve Mollusks, May 3-4, 1979, in Rock Island, Illinois.

Region 4. The Red-cockaded Woodpecker Recovery Team met in Charleston, South Carolina, to continue preparations for a rangewide survey of the species. The survey, co-sponsored by our Service and the U.S. Forest Service, will take place this fall and winter.

Region 5. A female peregrine falcon (*Falco peregrinus*) is reported to be sitting on two fertile eggs at a hack site in New Jersey. If these eggs hatch, it will be the first time in 20 years that wild peregrines of the eastern United States have successfully produced young.

SERVICE PARTICIPATES IN PLANT SYMPOSIUM

U.S. Fish and Wildlife Service photo

A symposium on Rare and Endangered Plant Species in New England was held at Harvard University May 4-5. Sponsored by the New England Botanical Club (NEBC) in cooperation with the U.S. Fish and Wildlife Service, the conference was attended by more than 300 persons from the Eastern United States and Canada. Major areas of discussion were Biology of Endangered Species, Plant Conservation Concerns in the New England States, and Conserving Rare Plants and their Habitats.

During the proceedings, Deputy Boston Regional Director William C. Ashe (*above center*) presented the Service's Citizen's Award to Dr. William D. Countryman (*left*), Chairman of NEBC's Rare and Endangered Species Committee. A Special Achievement Award (accepted by Club President Dr. Alice Tryon, *right*) went to all of the members of NEBC for their efforts to conserve New England Flora.

Dr. Countryman was honored for his personal dedication to conserving



and protecting New England's rare and endangered plant species. He helped coordinate a project, under partial sponsorship of the Service's Office of Endangered Species, which resulted in detailed reports on the rare, endangered, and threatened plants of each New England State (now available from the Service's Boston Regional Office).

Presentations or abstracts will be published in the January 1980 issue of *Rhodora* (volume 82), the NEBC journal.

PROPOSED TO EASE CAPTIVE BREEDING

tivity had no effect on wild populations.

Currently, the Service is dealing with the problem through regulations for Captive Self-Sustaining Populations of Endangered Species (CSSP's) (F.R. 6/1/77), under which 11 Endangered species in captivity in the United States are now treated as Threatened species. (The Endangered Species Act provides that prohibited activities such as taking, importation, exportation, and interstate or foreign commerce may be allowed for an Endangered species only for scientific purposes or to enhance the propagation or survival of the species. Such activities, when applied to a Threatened species, may be allowed for the same reasons plus economic hardship, zoological exhibition, educational purposes, or special purposes consistent with the purposes of the Act.)

The CSSP regulations made permit requirements simpler. Permit holders could freely engage in interstate commerce among one another. However, problems still existed for animal breeders. For instance: the regulations do not promote the propagation of species not qualified for CSSP status; the CSSP list is too limited and additions are difficult to effect; and permit requirements place a heavy burden on

the public. Moreover, classifying CSSP's as "species" distinct from wild populations of the same biological species is an artificial distinction.

Having administered the CSSP system for nearly two years, the Service has decided that a change is in order. Comments from the public on an advance notice on this same topic overwhelmingly supported less restrictive controls. The Service holds the view that the Endangered Species Act requires regulation of activities involving captive as well as wild populations of Endangered and Threatened species. This view has been confirmed by Congress, in recent action specifically exempting from certain prohibitions of the Act any raptor legally held in captivity or in a controlled environment on the effective date of the Endangered Species Act Amendments of 1978.

Wild populations stand to benefit from captive breeding, which can help replenish wild populations, reduce the need to remove specimens from the wild for scientific or other purposes, and provide opportunities for research, leading to improved management of wild populations.

Some activities involving captive wildlife, if not regulated, can have det-

perimental effects on wild populations. Consumptive uses could create a demand for products which might be further satisfied by wild populations; illegally-taken wild specimens could be claimed as captive-produced; and captive propagation could be supported with a continuous supply of wild-caught animals.

Through its proposed regulations, the Service is attempting to encourage captive propagation that will enhance the survival of Endangered and Threatened wildlife while discouraging activities that have detrimental effects on populations in the wild. To promote the protection of wild populations, a carefully structured definition of "bred in captivity"—identical to that adopted by the nations party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora at their March meeting in Costa Rica (see April 1979 BULLETIN)—would be used in the new regulations.

The Service proposal would apply to any native Endangered or Threatened species which is considered secure in that (1) it is in low demand for taking from the wild because of success with captive propagation, (2) its habitat is considered inaccessible, and

Continued on next page

(3) its population in the wild could be effectively protected if captive-bred populations were not as strictly regulated. (In accord with these proposed criteria, the Service has determined that one U.S. species, the Laysan teal (*Anas laysanensis*), would be eligible under the captive wildlife provisions.)

Under the proposal, importations would be allowed for the return of captive wildlife previously exported from the United States and identifiable as originating in this country. Import controls would give general protection to wild populations of exotic species. Exportation would be allowed if it was for the purpose of enhancing the propagation or survival of the species, and if the foreign recipient was qualified to undertake related activities.

Also, provided it is done to enhance the propagation or survival of the species, the Service proposes a lessening of the restrictions on interstate commerce in Endangered and Threatened species. The definition of "enhance the survival" (finalized on June 1, 1977), would also be expanded under the captive wildlife ruling to include the provision of health care, culling, contraception, grouping and handling of wildlife, and similar normal practices of animal husbandry.

Because the Service believes that activities involving captive wildlife should be regulated only to the extent necessary to conserve the species, with an emphasis on conserving wild populations, it does not wish to place an undue burden of paperwork on persons wanting to engage in otherwise prohibited activities. Persons wanting to conduct such activities would be required to register with the Service. Registration requirements would be based on standards set by the U.S. Department of Agriculture under the Animal Welfare Act (appropriate for all warm-blooded animals (mammals and birds)). Similar standards with appropriate adjustments would have to be met by persons working with cold-blooded animals.

The proposed registration requirement differs from the existing one for permits in that persons would no longer have to show past experience in caring for a particular type of wildlife or describe the containers and treatment for wildlife being transported or temporarily stored. Anyone with a Department of Agriculture registration or license can register with the Service.

Persons with valid CSSP permits or other Endangered or Threatened species permits for captive-bred exotic wildlife would only have to write the Service to request registration. (The Service could then use information already on hand from the permit application.)

To monitor activities involving captive-bred wildlife, the Service proposes to require registrants to submit:

(1) Reports of each transaction involving otherwise prohibited activities within 10 days of its completion;

(2) Written descriptions of identifying marks on captive-bred wildlife (to be exported and later reimported) to the Service prior to export;

(3) Semiannual written reports on any taking of captive-bred wildlife that results in its death or permanent loss

of reproductive ability; and

(4) Documentary evidence that the recipient of exported captive-bred wildlife has proper facilities and expertise, and will use the wildlife for purposes of enhancing the propagation or survival of the species.

Comments on the proposed regulations should be submitted to the Director, U.S. Fish and Wildlife Service, Federal Wildlife Permit Office, Washington, D.C. 20240, on or before July 23, 1979.

SERVICE RELAXES STATE ELIGIBILITY FOR COOPERATIVE AGREEMENTS

Continued from page 1

allow State fish and wildlife agencies to participate in the cooperative agreement/matching fund program even when they are not empowered to manage all federally-listed species resident in the State (see September 1978 BULLETIN).

Essentially, the 1973 Act required States to have adequate authority in areas such as law enforcement, research, and habitat acquisition, as well as active programs for the conservation of their resident, *federally-listed* Endangered and Threatened species of wildlife [as stipulated under Sections 6(c)(1) and (2)] to qualify for the agreements. As mandated under both the 1977 and 1978 amendments, Service regulations now provide for matching fund assistance to any State meeting certain criteria within subsections 6(c)(1) and (2), and having plans "under which immediate attention will be given to those resident species of fish and wildlife *or plants* which are determined by the Secretary and the State agency to be endangered or threatened *and which the Secretary and the State agency agree are most in need of conservation programs . . .* (emphasis added)."

In determining which Federal or State-listed species are "urgently in need of conservation programs," the Secretary will apply the following criteria:

(1) the degree of threat to the continued existence of the species;

(2) the recovery potential of the species;

(3) the taxonomic status (giving full species priority over subspecies or populations); and

(4) such other relevant biological factors as determined appropriate. (In addition to the above, States need not be authorized to acquire habitat for listed plants.)

States already possessing broad authority and wishing to undertake conservation programs for all federally-listed species may still do so and will remain eligible for matching funds under the cooperative agreement program.

To facilitate administration of the grant-in-aid program, the Service will evaluate species in need of conservation programs and allocate Federal matching funds to qualifying States and U.S. Territories on a semiannual basis.

STATUS OF SPECIES LISTED PRIOR TO 1975 UNDER REVIEW

Continued from page 1

Following the receipt of significant new information, proposals to modify the classification of the subject species (and/or to designate their Critical Habitats) could be warranted.

The Service is soliciting comments and information from the public, other governmental agencies, the scientific community, and other interested parties on the status and current threats to the species as well as appropriate recommendations for protection of essential areas as Critical Habitat. Data on the species' numbers and distribution, the specific area, features, and

importance of any habitat critical to their survival, and supporting documentation such as maps, bibliographic references, reports, and letters from authoritative sources will all be considered in the review process.

We regret that limited space precludes us from printing the entire list of species that are subjects of this review, but ask that you consult the May 21, 1979, *Federal Register*. Comments and data should be submitted to the Director (OES), U.S. Fish and Wildlife Service, Washington, D.C. 20240, no later than August 20, 1979.

Ban Upheld On Cayman Turtle Products

Cayman Turtle Farm, a mariculture operation on Grand Cayman Island in the British West Indies, has maintained turtles in captivity for several years, exporting products such as turtle shell jewelry, meat, leather, and turtle oil to the U.S. and other countries.

With the promulgation of special regulations on July 28, 1978 (along with the listing of the green sea turtle, *Chelonia mydas*, as a Threatened species), the importation of products of all six listed marine turtles into the U.S. was prohibited *without* exception for commercial mariculture operations (with a one-year grace period for interstate commerce in turtle products—see August 1978 BULLETIN). On September 5, 1978, (the day before the Fish and Wildlife Service/National Marine Fisheries Service regulations took effect) Cayman filed suit in the U.S. District Court for the District of Columbia, challenging the regulations. (FWS and NMFS subsequently agreed to stay enforcement of the pertinent prohibitions pending court review.)

On May 29, 1979, Judge John Pratt denied Cayman's motion, holding that

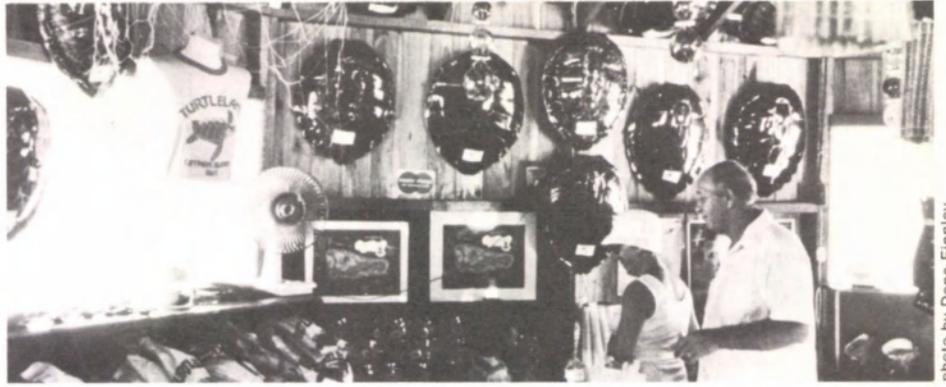


photo by Dona Finley

Tourists at Cayman Turtle Farm browse at sea turtle products now banned from importation into the U.S.

the administrative record of the two Services clearly supported their decision to prohibit importation of sea turtle parts or products. The court agreed that the importation of products from mariculture operations would create an incentive to establish other farms which would at least initially depend on eggs taken from the wild, thereby harming wild populations by stimulating an increase in the demand for sea turtle products and illegal poaching.

The court further upheld the Services' authority to adopt even stricter domestic controls than those (now protecting sea turtles) under the Convention on International Trade in Endangered Species of Wild Fauna and Flora, noting that a blanket exception

for Cayman's products would be inconsistent with the Convention since its products did not comply with the "bred in captivity" definition recently agreed to by the party nations in Costa Rica (see April 1979 BULLETIN). Finally, the court held that Cayman had not achieved closed-cycle operations (where all farm hatchlings are produced from parents which were farm hatchlings) and that, even if it had been able to make such a showing, the policies underlying the Act and the Convention were sufficiently strong to prohibit importation.

Import restrictions are now in effect, with interstate commerce regulations becoming effective after September 6, 1979.

Rulemaking Actions

June 1979

ENDANGERED SPECIES SCIENTIFIC AUTHORITY

Notices—May 1979

Composed of representatives from seven Federal agencies, the Endangered Species Scientific Authority (ESSA) was established by Executive order to insure the scientific soundness of governmental decisions concerning trade in endangered species of animals and plants. As the U.S. Scientific Authority for the Convention

on International Trade in Endangered Species of Wild Fauna and Flora, ESSA reviews applications to export and import species protected under the Convention, reviews the status of wild animals and plants impacted by trade, monitors their trade, makes certain findings concerning housing and care of protected specimens, and advises on trade controls.

ESSA Proposes Findings in Favor of Alligator Export

Largely due to Federal, State, and other conservation efforts, the American alligator (*Alligator mississippiensis*) has made a dramatic comeback in portions of the Southeastern United States, with its populations stabilized or increasing in many areas. As a result, the species was essentially removed from protection in three Louisiana parishes in 1975 through its reclassification as "Threatened—Similarity of Appearance (T-S/A)" under the Endangered Species Act, permitting regulated hunting in these areas under State management.

In 1977, alligators throughout Florida, Georgia, Texas, and remaining coastal areas of Louisiana were reclassified to "Threatened" status, a ruling which allowed the legal take of "nuisance" gators by Florida State wildlife agents acting under the authority of a cooperative agreement with the Fish and Wildlife Service. (Reclassification of additional populations to T-S/A is now under consideration for 9 additional Louisiana parishes.)

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Continued from page 5

The alligator's improved status recently prompted the 51 nations now partly to the Convention on International Trade in Endangered Species of Wild Fauna and Flora to relax protection of the species through its transfer from the Convention's Appendix I to Appendix II, a less restrictive category (see April 1979 BULLETIN). With its new Convention status, effective June 28, 1979, regulated commercial export of the alligator could be permitted upon a finding by ESSA that such activity will not prove detrimental to the species' survival in the wild and (in line with ESSA policy as discussed in the May 1979 BULLETIN) will not jeopardize other protected species of crocodilians.

ESSA has proposed to conditionally approve limited export of American alligators legally killed in Florida or Louisiana on or after June 28, upon a finding of no detriment (and contingent upon the revision of special Service regulations to facilitate law enforcement).

Because products of look-alike crocodilians are difficult to distinguish from those of alligators, and because trade in alligators could stimulate trade in similar protected species, ESSA proposes three conditions on export (should it be allowed) to ease enforcement: (1) Foreign buyers, tanners, and fabricators must be subject to U.S. licensing requirements similar to those currently in force within the United States; (2) Exports must be allowed only to licensed buyers, tanners, or fabricators located in countries which have ratified the Convention, and which have not taken reservations against Convention controls on trade in endangered species of crocodilians; and (3) Prior to export, all hides must be indelibly marked over their entire reverse surface with identifying symbols.

Comments on the proposed rule-making should be addressed to the Executive Secretary, Endangered Species Scientific Authority, 18th and C Streets, N.W., Washington, D.C. 20240.

Status of Guam Species Under Review

At the request of the Government of Guam, the Service is reviewing the status of 12 species from that island to determine if they should be listed as Endangered or Threatened species, and their Critical Habitat designated (F.R. 5/18/79). Under review are 10 birds and 2 mammals whose existence is reported to be threatened by a variety of factors.

- Marianas fruit dove (*Ptilinopus*

roseicapillus) numbers approximately 100 on Guam, and probably less than 500 exist (inclusive of those on Rota, Tinian, and Saipan). The species has suffered habitat loss due to urbanization.

- Marianas gallinule (*Gallinula chloropus guami*) has declined due to loss of suitable freshwater wetlands through draining for agriculture. Less than 100 are found on Guam and less than 50 on Tinian. The population numbers on Saipan and Pagan are unknown.

- Guam rail (*Rallus owstoni*), a flightless species, has suffered from introduced predators. The population on Guam is estimated at 500-1,000 birds.

- Edible nest swiftlet (*Collocalia inexpectata bartschi*) is a victim of insecticides and herbicides used during and after World War II. From 100-200 individuals are found on Guam, while the numbers on Rota, Tinian, and Saipan are unknown.

- Marianas fruit bat (*Pteropus mariannus mariannus*) has declined to a population numbering less than 100 on Guam because of habitat destruction and illegal hunting.

- Little Marianas fruit bat (*Pteropus tokudae*) also is suffering from habitat loss and illegal hunting.

- Micronesian kingfisher (*Halcyon cinnamomina cinnamomina*) has been reduced to a population on Guam of 100-150 birds due to loss of native limestone forest.

- Micronesian broadbill (*Myiagra oceanica freycineti*) is another victim of urban development. Fewer than 100 birds remain on Guam.

- White-throated ground dove (*Gallicolumba xanthonura xanthonura*) has declined to less than 100 on Guam because of urbanization, use of World War II defoliants, damage from typhoon Pamela in 1976, and illegal and accidental shooting during the hunting season for other birds.

- Cardinal honey-eater (*Myzomela cardinalis saffordi*) is restricted to remaining areas of pristine limestone forest in the northern cliffline. There are about 100-200 individuals on Guam.

- Marianas crow (*Corvus kulbarzi*), like all crows, is considered by many to be a pest and therefore shot by hunters and poachers. An estimated 100-150 birds remain on Guam.

- Bridled white-eye (*Zosterops conspicillata conspicillata*) has faced habitat loss and decline in numbers from urbanization, insecticides, and typhoon Pamela.

Critical Habitat has been recommended by Guam's Acting Governor Joseph E. Ada on an area of the northern cliffline for the Micronesian king-

fisher, Micronesian broadbill, white-throated ground dove, cardinal honey-eater, Marianas crow, and bridled white-eye. Critical Habitat was also recommended for the Marianas fruit dove and Marianas gallinule. No Critical Habitat recommendations were made for the Guam rail, edible nest swiftlet, Marianas fruit bat, and little Marianas fruit bat.

The Service is interested in obtaining information on essential habitat areas and on the status of these 12 species on other islands as well as Guam to determine whether they should be listed throughout their ranges or just on Guam.

Comments and data should be submitted to the Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240, on or before August 18, 1979.

NMFS Lists Totoaba As Endangered

The totoaba (*Cynoscion macdonaldi*), a marine fish found exclusively in Mexican waters in the Gulf of California, was determined by the National Marine Fisheries Service (NMFS) to be an Endangered species throughout its range (F.R. 5/21/79). This listing is based on a joint proposal by NMFS and the Fish and Wildlife Service (F.R. 12/30/76).

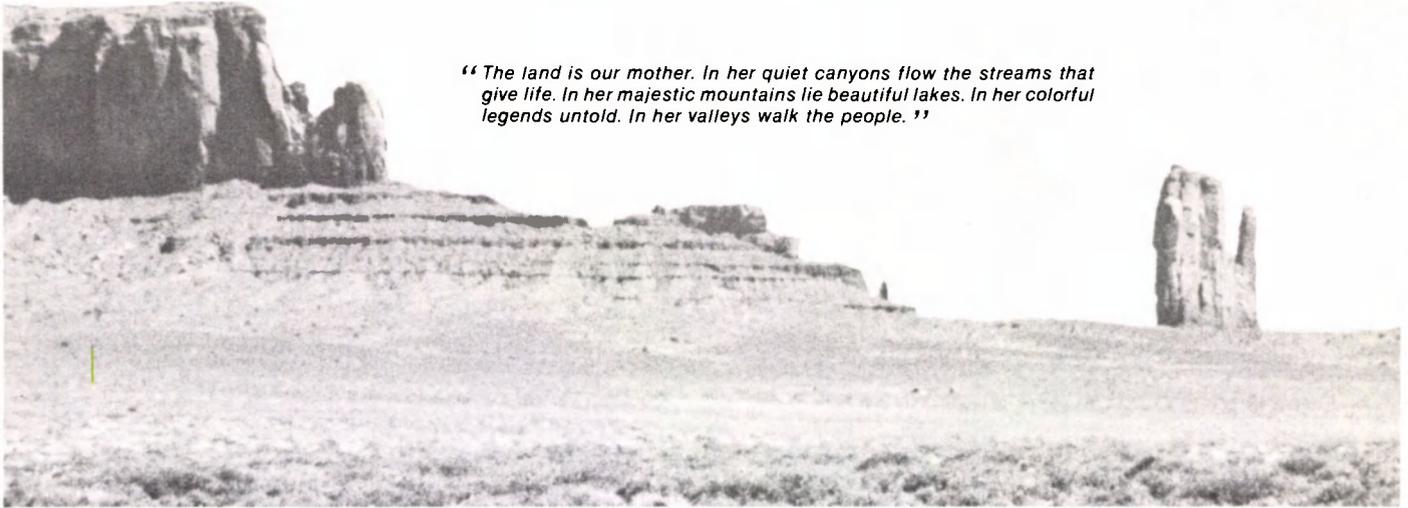
Reduction in the flow of the Colorado River into the Gulf of California (because of the Hoover and Morelos Dams) has resulted in the alteration of the totoaba's spawning and nursery habitat—one reason for the initial decline of the species. According to a report on the NMFS 1978 workshop to evaluate the biological status of the species, other reasons for its decline in the 1940's and '50's were overfishing by directed fisheries and incidental take in the shrimp fishery, and possibly contamination from insecticides.

The totoaba, the largest species of the genus *Cynoscion* in the family *Sciaenidae*, has been recognized as a protected species by the Mexican Government since 1975. Since the fish only occurs in Mexican waters, no Critical Habitat has been designated.

Seven Molluscs Under Review

The status of seven Endangered molluscs will be reviewed by the Service to determine whether they should retain their Endangered status, be reclassified as Threatened, or be removed from the U.S. List of Endan-

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"The land is our mother. In her quiet canyons flow the streams that give life. In her majestic mountains lie beautiful lakes. In her colorful legends untold. In her valleys walk the people."

ENDANGERED SPECIES: NEW CHALLENGE FOR THE NAVAJO

Considered the largest tribe of native Americans in the United States, the Navajo Indians number more than 150,000, with the Navajo Reservation stretching to more than 16 million acres—larger than several Northeastern States. Bordered on the north by the San Juan and Colorado Rivers, the Navajo Nation occupies more than one fourth of the State of Arizona, and smaller portions of New Mexico and Utah.

First recognized as an ethnic group from dwellings dating around the 15th Century, much of "Old Navajo Country" was under Spanish occupation from 1598 to 1821, followed by Mexican and then U.S. rule. The Navajo were driven from their homeland in 1863 by U.S. troops (led by Colonel Christopher "Kit" Carson), and many Indians were held captive at Ft. Sumner, New Mexico. On June 1, 1868, the Navajo Reservation was established under U.S. treaty. One year later, the Federal Government issued 30,000 sheep and 2,000 goats to the Navajos in the hope of bolstering their economy.

More than a century later, the Navajo Nation is one of the most advanced Indian tribes. They have gone into business on a large scale, producing lumber and operating saw mills, establishing shopping and craft centers, engaging in banking, and leasing vast tracts of oil, gas, coal, helium, and uranium producing lands. Paved roads criss-cross the land, and the people have schools and hospitals.

Under the white man's influence, the Navajo people have in many ways developed a society patterned after the rest of the United States. The

hardships of the early Navajo's existence, in balance with and close to nature, have been generally altered. While most of her people continue to cling to the traditional ties with their culture, the Navajo Nation is now faced with a multitude of "modern" social, technological, and environmental challenges. Grazing, logging, mining, irrigation, and industrial development are increasingly important to the Navajo Tribe. But these and other activities are rapidly sapping the Navajo's vast natural resource heritage. Where bear once filled the forests and eagles the sky, it is sadly ironic that, today, even the American Indian must act quickly to insure the survival of his native fish and wildlife.

The importance of wild game to the Navajo was recognized in the creation of the Navajo Reservation, when it was stipulated that Indians could leave the Reservation to hunt big game (implying that, as early as 1868, there was not sufficient game to meet their needs). In 1880, an estimated 5 percent of Indian subsistence was obtained from hunting (exclusive of buckskin, used for moccasins and clothing). Following complaints of depletion in surrounding States, Indians were prohibited from hunting outside the Reservation around 1900, and their attention was then concentrated on game remaining on Navajo lands. The antelope was soon exterminated, and deer reduced to an insignificant remnant by both heavy hunting and loss of vital habitat from over-grazing and accompanying soil erosion.

Through conscientious management, many big game species have since

been restored to portions of Navajo territory. Moreover, the Tribe is active in many other aspects of land and wildlife management—controlling predators, managing timber and livestock, and even protecting rare and Endangered species.

Established in 1956, the Fish and Wildlife Branch of the Navajo Department of Natural Resources was primarily concerned in its early years with protecting family flocks of sheep and goats from predatory animals. Freeman Taber—a U.S. Fish and Wildlife Service employee—came to the Reservation in 1958 (under a cooperative agreement with the Bureau of Indian Affairs, the Service, and the Navajo Nation) to guide the development of an effective animal damage control program for the Tribe and eventually the establishment of sound wildlife and fishery stocking and management programs. Since that time, the Navajo's interest in and commitment to wildlife conservation have grown considerably.

The Navajo Nation recently became the first Indian Tribe to enact legislation to protect its native Endangered species. In November 1977, the Tribal Council passed a comprehensive Navajo Endangered Species Act—a measure providing for both direct and inter-agency protection of all species listed as "Endangered" on the Navajo Reservation, including federally-listed species.

Under the Navajo wildlife code, the taking, transportation, sale, export, or harassment of all Endangered wildlife is now prohibited on the Reservation (although specimens may be

Continued on next page



Navajo Ken Foster displays a preserved mountain lion (*Felis concolor*) specimen. Although believed on the decline, the status of this species remains undetermined on the Reservation.

photo by Dona K. Finnley

transported through the Navajo Nation without restriction under State and Federal permits). Any violators may be subject to imprisonment for up to 150 days, or fined as much as \$500. No exceptions are provided for ceremonial or scientific purposes beyond those provided under Federal law. (Indians can now receive bald eagle feathers under permit from the Service's feather depository in Pocatello, Idaho.)

The new law calls for the development of a list of indigenous species and subspecies determined to be endangered within the Navajo Nation on the basis of criteria paralleling those used for a finding of endangerment under the Federal Endangered Species Act. The Fish and Wildlife Branch is now finalizing its proposed list of En-

dangered species for presentation to the Tribe's Resources Committee.

Empowered by the Tribal Council with regulatory authority in all natural resource matters, the Resources Committee should act on the branch recommendations this summer. Once approved, the official list will be reviewed every two years, with the Fish and Wildlife Branch recommending additions or deletions in accord with current biological data.

The branch is also seeking two major modifications of the protective legislation, making it applicable to Endangered plants as well as animals and also providing for the protection of structural and non-structural improvements for fish and wildlife, which will, to a degree, authorize the protection of essential habitat. (Habitat pro-

tection is not otherwise provided for, although the Tribal Council's Advisory Committee has regulatory authority to withdraw fish and wildlife management areas for protection purposes.)

Bald Eagle Censusing

Under the direction of Ed Olsen, Jr. ("loaned" by the U.S. Fish and Wildlife Service in 1968 to succeed Taber as head of Navajo Fish and Wildlife), biologists within the branch's Technical Section are already developing conservation plans for the bald eagle (*Haliaeetus leucocephalus*) and four other Navajo species protected under the Federal Endangered Species Act. Early in April, they conducted their third bald eagle and general raptor survey—part of a cooperative effort to inventory both the numbers and distribution of wintering eagles in the States of Arizona and New Mexico to ensure adequate habitat protection. (All of this work had to be accomplished with fixed-wing aircraft and helicopter—an expensive operation.)

Bald eagles have been observed wintering along the San Juan River from November through March. (None were sighted during the April survey, indicating their apparent migration from the San Juan River during March.) Sporadic reports of adult birds on the Reservation in the spring, summer, and fall have been received, but the occurrence of a breeding bald eagle population on Navajo land has not been verified. Mike Coffey, who coordinates the section's survey effort, has mapped sightings of raptors on the "Navajo side" of the San Juan, where a total of 36 bald eagles were observed near the river this past winter. Long-range plans call for the capture and radio-tagging of several bald eagles to determine their migration patterns.

There is evidence of increasing concern for eagles on the Reservation, according to John Antonio, the section's chief biologist. Last year, golden eagle (*Aquila chrysaetos*) chicks were turned in to the branch for care on two separate occasions. (One was returned to its nest, and the other sent to a rehabilitation center, with its release expected this summer.)

Peregrine Work

This June and July, the Navajo Nation is cooperating with Interior's Fish and Wildlife Service and Bureau of Land Management, in a joint, Forest Service-administered survey and habitat evaluation effort designed to learn the distribution and production of the Endangered peregrine falcon (*Falco peregrinus anatum*) in Arizona. (The

entire State could not be censused without the Tribe's active participation.) Data derived from these collaborative studies should tell Navajo biologists whether the peregrine is a resident species, a seasonal user, or only a migrant on the Reservation. (Reports have already been received of historical eyries near Shiprock.) Biologists will also conduct habitat analyses to determine the feasibility of re-introduction to suitable nesting areas. (The branch expects to cooperate and exchange data on both the peregrine and eagle with State and Federal agencies, as well as with Service-appointed recovery teams in the hope of guiding future land-use/management activities that may affect habitat areas.

Ferrets

The Navajo Reservation may contain one of the last active territories in the Southwest for the Endangered black-footed ferret (*Mustela nigripes*), an extremely rare mustelid feared close to extinction. Under a cooperative program with the Fish and Wildlife Service, New Mexico recently trained special dogs to "sniff out" ferrets in prairie dog towns, and the Tribe and New Mexico Fish and Game are now negotiating cooperative use of the dogs to learn if ferrets remain on Navajo land. (Trenching has recently been detected in a dog town near Shiprock—considered by many experts as the prime potential area for ferrets if indeed they survive.)

Under contract to the Service, Richard Kontz conducted a search for the ferret on Navajo land during 1973-1974, spotlighting for ferrets in the Shiprock and Fort Defiance areas (where the most recent signs and most reliable interviews were obtained.) Trenching, plugged burrows, and scats were located and—in June 1974—a ferret was seen near Sanostee. According to Kontz, "It still looks as if the presence of ferrets on the Navajo (territory) is a reality." He estimated two full years would be required to survey prairie dog towns throughout the Reservation and obtain interviews in suspected habitat areas. But thorough survey work could not be supported due to lack of funds and manpower.

Biologists, enforcement officers, and Navajo trappers are now attempting to monitor prairie dog towns scheduled for poisoning, for trenching and other signs of ferret activity. The Tribe is also preparing leaflets and radio spots in the hope of educating the public on the appearance and habits of ferrets. (Medicine men have been known to use ferrets for ceremonial purposes.) Should a population be found, the

area would be protected and proposed to the Service for designation as Critical Habitat.

Fishes

Two Endangered species of fish are believed to occur within Navajo waters: the Colorado River squawfish (*Ptychocheilus lucius*) and the humpback chub (*Gila cypha*). Another, the razorback sucker (*Xyrauchen texanus*), has been proposed for Federal protection.

Unfortunately, the Navajo Fish and Wildlife Branch cannot yet afford the services of its own fisheries biologist, so needed surveys have not been accomplished. (The Service's Division of Fisheries Assistance has a biologist at Gallup who provides technical assistance to the Tribe in fisheries management and other areas.) Some authorities feel that the existence of all three species within the Reservation is questionable (although a Colorado squawfish was taken from the San Juan in 1978). Intensive field studies of the San Juan and Colorado Rivers are needed to verify the existence of the fishes, to determine their population size and distribution, and to learn their biological requirements and apparent limiting factors.

Environmentalists and others are concerned that water depletions resulting from the proposed Navajo Indian and Gallup Water Supply Project—slated to tap more than 1,000,000 acre/feet of water from the San Juan River—will pose a significant threat to the fish as well as eagles and other species dependent upon the river environment. Several law suits have resulted, and Interior's Bureau of Reclamation recently agreed to consult with the Fish and Wildlife Service on the effects of the proposed water manipulation program. The Service has already addressed the terrestrial impacts of the Navajo Indian Irrigation Project on the black-footed ferret which may inhabit the affected area (as well as on a plant proposed for Federal list-

ing within the proposed irrigation district), and has issued a finding of "no jeopardy."

In addition to the listed species on the Reservation, the blue-black silverpot butterfly (*Speyeria nokomis nigrocaerulea*) and the Mesa verde cactus (*Sclerocactus mesaeverdae*), occurring near Shiprock, have been respectively proposed for Threatened and Endangered classification. Critical Habitat has also been proposed for the butterfly, now restricted to isolated seeps and springs near the Arizona/New Mexico border where it feeds (in larval form) on violets.

Bobcat

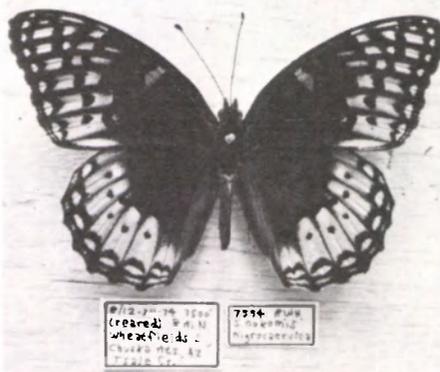
The active involvement of the Navajo Nation in wildlife management was brought clearly to the attention of wildlife authorities in Washington more than a year ago, with regard to the monitoring of trade in bobcat and other U.S. species protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora—an international treaty ratified by 51 countries. Under Executive order, the Endangered Species Scientific Authority (ESSA)—acting as U.S. Scientific Authority for the Convention—is required to review available data on the status of all native species protected under the treaty's appendices to insure that export will not prove detrimental to their survival in the wild.

Following the receipt of a favorable determination from ESSA, the Service's Wildlife Permit Office (serving as the U.S. Management Authority for the Convention) was able to authorize controlled export of this Appendix II species from the Navajo Nation along with most of the 50 States.

Navajo biologists are monitoring the taking of bobcat within their territory in compliance with Convention requirements. Currently, there are about 15 commercial trappers taking bobcats along with animal damage control specialists who will take bobcat strictly on a complaint basis. (Hides may then be sold for up to \$400 a pelt, with compensation going back to the trapper.) Of the 126 bobcats reported taken during the 1978-79 season, 85 were captured by commercial trappers (and 62 of these were tagged).

In the early 1960's, biologists reported that the bobcat was apparently on the increase on Navajo land. But with heavy trapping pressure, harvest figures now indicate a possible decline in numbers. The Tribe plans to launch comprehensive studies of bobcat within the Reservation to determine its status, distribution, habitat use, sex and age ratios, and productivity/re-

Continued on next page



Upper surface of a female blue-black silverspot butterfly.

Fish and Wildlife Service photo

cruitment. Together with harvest data, they hope that the optimum sustainable yield may be determined for the species. (Although now considered a harvestable species, Navajo biologists believe careful management will be necessary to insure the bobcat's long-term preservation.)

Bighorns

Portions of Navajo territory are within the historic range of the desert bighorn sheep (*Ovis canadensis nelsonii*), with early records indicating they were fairly numerous in the mountains and badlands until the 1860's. There had been no confirmed reports of the species in recent years until this February, when one was rumored shot in a canyon near the mouth of the Little Colorado River.

Tribe biologists set out this spring in the hope of finding a surviving band, and have verified the shooting. Observers will camp near waterholes this summer during periods of drought, and will look again for tracks in the winter snow. If sheep are found, researchers hope to radio-track several rams to determine the size and distribution of any resident population, and will attempt to protect habitat areas.

Navajo Nation biologist Mike Walker hopes that hoof tracks like these, found on upper ledges of canyons near the Colorado River, are those of the elusive bighorn sheep.



If none are located, the Tribe plans to work with Utah Fish and Game personnel who have expressed an interest in supplying bighorns along the Navajo (southernmost) side of the Colorado River. Biologists are in the process of studying potential transplant locations, which should be free of wild burros and domestic livestock, to determine how many sheep available vegetation would support.

Bear

Although once present on the Reservation, grizzly bears (*Ursus arctos horribilis*) vanished from Navajo land around 1928, when the last specimen was taken. (Two other listed species on the Reservation also disappeared around this period: the jaguar (*Panthera onca*), last observed during World War I, and the wolf (*Canis lupus*), last reported in 1920.) Because of their size and ferocity, the grizzlies were held in awe by the Navajo, who knew them as "frosty-faced bears."

Ken Foster, a Navajo who has worked with the Tribe's predator control program for 20 years, says that "a majority of the Navajo worship bear, as they thought they were people at one time." According to Navajo Indian

legend, there was once a beautiful Indian maiden who took a coyote for her husband. When he begged to go hunting with her 12 bothers, they killed him in revenge. The maiden went in search of her husband for four nights in four directions of the earth, carrying fangs and claws made from bone needles (and becoming hairy all over). She then killed all her brothers except the youngest, who escaped and shot an arrow into the bush where the "Bear Maiden's" life was hidden. The gods revived and sentenced her to be cast forever among the creatures who forage for their food, decreeing that bear shall be used as food only in times of famine, and that this animal—once a lovely maiden and sister—shall be taken only in a ceremonious way.

Bear are protected on the Reservation, and taken only for damage control purposes. Ken remembers that bear depredations were a problem until about 1968, when complaints began to dwindle. The effects of predator control on the Navajo bear population have never been monitored, and the Fish and Wildlife Branch is designing a study to determine the impacts of taking, timber harvesting, strip mining, recreational uses, and other potentially adverse activities on the bear's numbers. Black bears (*Euarctos americanus ambyliceps*) are still found along the Carrizo-Lukachukai-Chuska mountain chain, but may be on the decline. Little is known about their ecology on the Reservation, and biologists want to radio-track several over the next couple of years to collect data on their seasonal movements, food and habitat needs, population characteristics, and mortality factors to develop management recommendations.

Interagency Cooperation

In addition to caring for native species through direct protection and management, an important objective of Navajo Fish and Wildlife is the development of an advisory network with Federal agencies and adjoining States to encourage integrated land management planning. The branch hopes to negotiate cooperative agreements with the concerned State and Federal agencies and will strive to keep Interior's Bureau of Indian Affairs and Navajo Nation administrators advised of the current status and needs of protected species.

To meet this goal, the branch is preparing guidelines to promote consideration of endangered and other wildlife needs during early planning for timber, range/grazing, mining, transportation, water development/irrigation, agricultural, and recreational activities.

photo by Dona K. Finnley

Administration and Funding

Having conceptualized a rather ambitious conservation program, Olsen and Fish and Wildlife staffers are anxious to round out their management plans for endangered and nongame species. But funding is scarce, and costs escalating.

As with most State fish and game agencies, most of the funding for the Tribe's wildlife programs has come from hunting and fishing licensing. For Fiscal Year 1979, the Department of Natural Resources is operating on a budget approaching \$3.5 million, from which it administers four major programs: Fish and Wildlife, Forest Management, Range Resources, and Parks and Recreation Management. Of this amount, a little more than \$500,000 is allocated for fish and wildlife programs (with almost half expended for animal damage control) in an attempt to minimize livestock losses—a mammoth task, with more than 15 million acres now grazed).

Within the Fish and Wildlife Branch monies are also channeled into enforcement activities (the branch employs four conservation officers, with two trained and authorized as Federal Game Wardens). Community cat and dog control, another arm of the branch, works to manage stray, wild, and diseased dogs (estimated in 1977 at 100,000) and cats, with assistance from BIA and (in previous years) the Public Health Service. The remainder of the Branch's budget is allocated for wildlife management, coordinated by the Technical Section's three staff biologists (with assistance from consultants and summer interns).

While in strong support of the Tribe's conservation efforts, the Fish and Wildlife Service is constrained under existing law from assisting the Navajo Indians through the Endangered Species Grant-in-Aid Program. (Section 6 of the Endangered Species Act of 1973 provides for two-thirds matching fund assistance to States and territories of the U.S. with active conservation programs and authority to manage and protect their resident Endangered or Threatened species. See related story on page 1.) As a result, the Service contribution has been limited (through support of Ed Olsen and his operating expenses) to about 5 percent of the entire branch budget.

Indian tribes have also been excluded from funding authorization under the Service-administered Fish and Wildlife Restoration ("P-R/D-J") Programs, under which three-fourths Federal matching funds are apportioned to the 50 States based on hunting and fishing license sales and the State's

land and water area.

Authority differs, however, under the Service's Fishery Resources Program (formerly "coastal anadromous") under which American Indians in the State of Washington are receiving Federal funds for fish rearing and release and catch monitoring (in compliance with the Boldt decision). The Nisqually, Quinault, Hoh, and Squaxin Island Tribes, as well as the Northwest Indian Fish Commission, are to receive around \$200,000 during FY 1979 and 1980 from the Service, to be matched by the recipients on a 50/50 basis (primarily with BIA funds available under the Indian Self-determination Act).

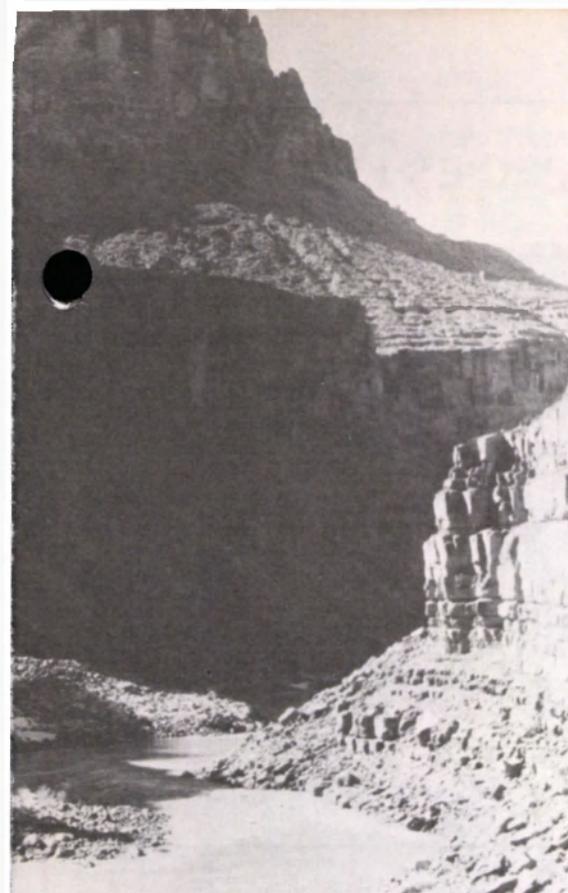
Indian tribes are considered sovereign governing entities under other environmental laws, such as the Clean Air Act Amendments of 1977 and the Surface Mining Control and Reclamation Act of 1977 (through which tribes receive 50 percent of mine operation revenues to reclaim abandoned mines on their lands—perhaps promising precedents).

Section 7 of the Federal Endangered Species Act calls upon all Federal agencies to "... utilize their authorities in furtherance of the purposes of this act by carrying out programs for the conservation of endangered and threatened species." Under this mandate, the Navajo Tribe remains hopeful that BIA can make more dollars available to strengthen DNR's endangered species management role on the Reservation. (For FY 1979, the agency allocated about \$50,000 to Navajo fish and wildlife programs.)

"In many ways, the Navajo Nation is in a real jam in terms of habitat deterioration," Olsen believes, "but the Tribe is willing to deal with the problem, and I think they can do it best internally." So far, Olsen says they are making progress, but it's been a costly, uphill battle. "I guess what they want most is to be treated at least the way the government treats other State agencies, especially in fish and wildlife, so that they can get the job done."

Like an eagle without feathers, the Navajo Nation's endangered species program will never get off the ground without sufficient funding. Branch biologists are just now learning the magnitude of the task ahead, and it will take time and money to census peregrines and eagles, to search for the elusive ferret, to sample for Endangered fish, and to study other species like the mountain lion (*Felis concolor*), whose status remains unknown.

"While we don't have the money to support comprehensive programs," biologist Antonio says "we must do what we can with the funds now available. We only hope we haven't waited too long."



Some biologists believe the Colorado River several miles below Glen Canyon Dam may still support Colorado River squawfish. Upper canyon ledges are prime potential habitat for bighorn sheep.

The Bureau of Indian Affairs (BIA) has traditionally held trust responsibility for Navajo natural resources. Calling for the development of a comprehensive Navajo endangered species program, Department of Natural Resources (DNR) director Roger C. Davis asked in 1977 for BIA assistance in implementing a long-range conservation plan that insures balanced resource planning. "I feel that it is of prime importance to develop the technical capability in wildlife management at the agency level where wildlife, range, forest, parks and other technical personnel could plan together in the development and protection of our natural resources."

The Bureau has been cooperating with the U.S. Fish and Wildlife Service and Federal land management agencies to insure that its programs are compatible with endangered species needs, as required of all Federal agencies under Section 7 of the Endangered Species Act. (Representatives of BIA were present at a 1977 Service workshop designed to guide agency compliance with President Carter's request that Federal agencies expedite the protection of Critical Habitat for Endangered and Threatened species on lands they own or manage.)

photo by Dona K. Finnley

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gered and Threatened Wildlife and Plants (F.R. 5/1/79). The species under review are the yellow-blossom pearly mussel (*Epioblasma (=Dysnomia) florentina florentina*), orange-footed pearly mussel (*Plethobasis cooperianus*), pale lilliput pearly mussel (*Toxolasma cylindrella*), birdwing pearly mussel (*Conradilla caelata*), turgid blossom pearly mussel (*Epioblasma (=Dysnomia) turgidula*), tan riffle shell mussel (*Epioblasma walkei*), and Cumberland monkeyface pearly mussel (*Quadrula intermedia*).

The seven species occur in portions of the Clinch, Duck, Elk, Middle Fork Holston, Paint Rock, Powell, Red, and Tennessee Rivers in Alabama, Kentucky, Tennessee, and Virginia. The Service is soliciting views and information from the Governors of those States on the status of the molluscs within their jurisdictions. Other interested parties are invited to submit any factual information, especially publications and written reports regarding the species in question.

All of the species (except the tan riffle shell mussel) were listed in a final rulemaking (F.R. 6/14/76) which determined 159 species protected under Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora to be Endangered. The tan riffle shell was listed the following year (F.R. 8/23/77). Protection was warranted for all species because habitat destruction has resulted in a serious decline in their population numbers.

The listing of the seven molluscs was recently challenged in a suit brought by proponents of the Tennessee Valley Authority's (TVA) Columbia Dam project. The dam, to be situated on the Duck River in Tennessee, would jeopardize the existence

of some of these species, according to a biological opinion issued by the Service's Director on February 16, 1977. The suit asked for a judgment that the Interior Department (under the National Environmental Policy Act) is required to prepare an Environmental Impact Statement (EIS) on the listing of Endangered molluscs in the Duck River.

U.S. District Court Judge L. Clure Morton dismissed the case saying, "The urgency (of protecting endangered wildlife) is declared by Congress. This court, the Secretary, and others cannot add to or subtract from the procedures set out in (the Endangered Species Act)." Information presented in this case resulted in

petitions from Representative Robin Beard (R-TN) to review the status of the seven molluscs.

Consultation between the Service and TVA involving the birdwing pearly mussel, turgid blossom pearly mussel, tan riffle shell pearly mussel, Cumberland monkey-face pearly mussel, and pale lilliput pearly mussel has been postponed until TVA furnishes the Service with the results of surveys they are conducting on the Duck, Clinch, and Powell Rivers to determine the status of these mussels. Thus far, surveys have turned up a second population of the birdwing pearly mussel and specimens of the Cumberland monkeyface pearly mussel in the Duck River.

BOX SCORE OF SPECIES LISTINGS

Category	Number of Endangered Species			Number of Threatened Species		
	U.S.	Foreign	Total	U.S.	Foreign	Total
Mammals	33	227	260	3	18	21
Birds	67	144	211	3		3
Reptiles	11	48	59	10		10
Amphibians	5	9	14	2		2
Fishes	29	11	40	12		12
Snails	2	1	3	5		5
Clams	23	2	25			
Crustaceans	1		1			
Insects	6		6	2		2
Plants	21		21	2		2
Total	198	442	640	39	18	57

Number of species currently proposed: 158 animals
1,850 plants (approx.)

Number of Critical Habitats listed: 34

Number of Recovery Teams appointed: 66

Number of Recovery Plans approved: 22

Number of Cooperative Agreements signed with States: 23

May 31, 1979



ENDANGERED SPECIES TECHNICAL BULLETIN

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