

# ENDANGERED SPECIES

**Technical Bulletin** Department of Interior, U.S. Fish and Wildlife Service  
Endangered Species Program, Washington, D.C. 20240

## Endangered Classification Extended to Ocelots in the U.S.

The ocelot (*Felis pardalis*) was listed as Endangered throughout almost all of its range in 1972 but, due to an oversight in the original rulemaking process, those few occurring in the United States (Texas and Arizona) did not receive protection. Accordingly, the Service has published a separate rule (F.R. 7/21/82) extending the Endangered classification to ocelots occurring in these two southwestern States.

### Background

Habitat modification and market hunting for its valuable fur resulted in a serious decline in the ocelot throughout its range in North, Central, and South America, leading the Service to list the cat in 1972 as Endangered under the Endangered Species Conservation Act of 1969. The requirement in the 1969 law, however, that governors of any affected U.S. States be notified at the time of listing was overlooked, and the ocelot was listed as a "foreign" species

only. When the oversight was discovered and it appeared that ocelots in the U.S. were not Federally protected under the Endangered Species Act of 1973 (which superseded the 1969 Act), the Service published a proposal (F.R. 7/25/80) to rectify the original error and to gather additional information on the species' status. Four other "foreign" species, which were thought to be in the same situation as the ocelot, were also proposed: the short-tailed albatross (*Diomedea albatrus*), thick-billed parrot (*Rhynchopsitta pachyrhynchus*), jaguar (*Panthera onca*), and margay (*Felis wiedii*). These species, however, are not included in the final rule.

Only two comments pertaining to the proposed ocelot listing were received. The Governor of the State of Texas fully supported listing the ocelot, as well as the other species in the proposal. In opposition, a private organization called the National Association for Sound Wildlife Programs asserted that (1) there is no scientific documentation that

the ocelot throughout its range is Endangered or Threatened in the wild, (2) there is ample evidence that the species has been exterminated in the wild in the U.S., and (3) if it is not exterminated, there is no evidence of a viable population in the wild in the U.S. The Service found that there is ample evidence to disprove all three of the Association's comments. Based on the best scientific and commercial information available, the 1972 listing is appropriate and the status of the ocelot is continuing to deteriorate due to habitat destruction throughout vast areas of Latin America. Evidence has been received showing that a viable breeding population of 12 to 60 animals does still occur on about 50,000 acres in southeastern Texas, but they are subject to the same threats as ocelots to the south. A few ocelots are thought to cross the border occasionally into Arizona; therefore, that State was included in the rule.

### Effects of the Rule

The listing rule extends the protection of the Endangered Species Act of 1973, including the prohibitions on "taking" and the Federal habitat conservation provisions under Section 7, to ocelots in the two States. (Taking of ocelots is already prohibited under Texas law.) About 20,000 acres of ocelot habitat currently are being managed for the cat at Laguna Atascosa National Wildlife Refuge. The remaining 30,000 acres in private ownership are used primarily for livestock grazing and lease hunting for deer, uses which are entirely compatible with the listing and will not be affected negatively in any way.

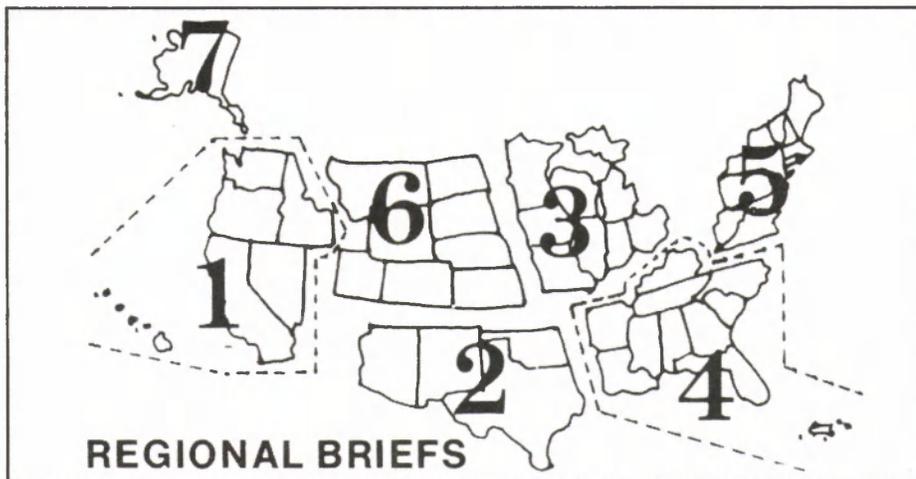
Critical Habitat was not determined at this time for two reasons. Ocelots are extremely valuable commercially for their fur, and pinpointing the location of their last U.S. population could encourage illegal taking. Further, much of the ocelot's habitat is already protected on the Laguna Atascosa Refuge.

The 2-year deadline imposed under amendments to the 1973 Act for making final determinations on proposed listings has expired for the other species included in the proposal, although they are not precluded from future listing consideration.



Photo by Tom Smylie/U.S. Fish and Wildlife Service

Ocelots in Texas and Arizona are now protected as Endangered by the Endangered Species Act.



**Endangered Species Program regional staffers have reported the following activities for the month of July:**

**Region 1**—Property, totalling 577 acres, at Blue Ridge (Tulare County, California) was optioned on June 23, 1982. This property is part of the impor-

tant roost area for the severely Endangered California condor (*Gymnogyps californianus*).

Field work for the forest bird survey in the Commonwealth of the Northern Marianas was completed on June 5, 1982. Three months were spent collecting field data during which the Is-

lands of Rota, Tinian, Saipan, and Aguiguan were surveyed by Service personnel and were assisted throughout by Department of Natural Resources staff from the Mariana Islands. The variable circular plot method was used in the survey, and on the four islands 42 transects and 782 stations were marked. Counts were made at each of the stations. In addition to the forest bird survey, several previously unreported seabird colonies were visited and mapped. This is the first comprehensive and systematic survey to be completed on these islands. The results will be used in updating the Endangered and Threatened Species List, as an information base in planning development projects, and in formulating environmental legislation in the newly established commonwealth government. Preliminary findings include the following: The Tinian monarch, *Monarcha takatsukasae*, an endemic species on Tinian, was found to be abundant though it is listed as Endangered. The Micronesian megapode, *Megapodius laperouse*, also listed as Endangered, was found to have a more extensive distribution on Saipan than was previously thought. The nightingale reed-warbler, *Acrocephalus luscinia*, also listed as Endangered, is common throughout most of Saipan, but is rare on Aguiguan. The Vanikoro swiftlet, *Aerodramus vanikorensis*, a candidate for listing, was not found on Rota or Tinian, and has apparently become extinct on these two islands within the last 20 years. The bridled white-eye, *Zosterops conspicillata*, another candidate, is abundant on Saipan, Tinian, and Aguiguan, but has disappeared from the lowlands of Rota within the last 20 years. Possibly a newly introduced disease has affected the swiftlet and white-eye populations. An undescribed seabird colony on Naftan Islet, 1 km south of Aguiguan, harbored several non-listed seabird species, including the sooty tern, *Sterna fuscata*; common noddy, *Anous stolidus*; wedge-tailed shearwater, *Puffinus pacificus*; brown booby, *Sula leucogaster*; and masked booby, *Sula dactylatra*.

During 1981, the two Marianas mallards (*Anas oustaleti*) kept at Sea World in San Diego, California, died. They are believed to have been the only birds of their species in captivity, and they died before producing any young. Once occurring on Guam, Saipan, and Tinian, the duck is now extinct on Guam and estimates made in 1979 suggested that probably fewer than 20 were still in existence in the wetlands of Saipan and Tinian. The decline has been attributed to hunting by humans and introduced predators (such as the Polynesian rat), and the loss of wetland habitats due to changing land uses. Lucian Kramer, a

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**U.S. Fish and Wildlife 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, Iowa, Michigan, Minnesota, Missouri, 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, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. **Region 7:** Alaska.

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biologist with the Service's Pacific Islands Area Office in Honolulu, spent two weeks in Saipan in late May of this year in an attempt to locate and capture up to two pairs of Marianas mallards so that the captive propagation effort could be continued. Mist nets were erected in the vicinity of Lake Susupe on Saipan, and surrounding wetlands were intensively watched. No Marianas mallards, however, were heard or seen. Reports of sightings were followed up, but were discovered to be misidentifications of other bird species, often including Chinese bitterns and other ducks that pass through Saipan on their yearly migrations. Although it cannot be stated that the Marianas mallard is extinct, it can be said that its numbers must be dangerously low.

Following the May 10 emergency listing of the Ash Meadows Amargosa pupfish (*Cyprinodon nevadensis mionectes*), and the Ash Meadows speckled dace (*Rhinichthys osculus nevadensis*), a status survey for these two Endangered fishes was conducted by biologists from the Reno and Sacramento Endangered Species Offices and the Nevada Department of Wildlife. Efforts continue to secure the privately owned habitat of the two Ash Meadows fishes through land exchange proposals.

The California least tern (*Sterna albibrons browni*), is experiencing an exceptionally poor nesting season in San Diego County so far this year. Essentially, no young were fledged in the first nesting period (through June). Although avian and mammalian predation is an annual problem at most nesting colonies, several colonies usually manage a successful breeding season. Predation has been so acute and widespread to date that all colonies have completely failed, except at Santa Margarita River, which has the highest numbers of nesting pairs in over a decade. If any recruitment is to occur this year, it will have to occur in the second nesting period (largely renesters and second year birds breeding for the first time).

Three peregrine falcon (*Falco peregrinus*) chicks, bred in captivity at the Santa Cruz Predatory Bird Research Group Lab, were transported to the Oregon coast and placed in an artificial nest structure on a cliff as part of a reintroduction project. The project, being administered by the Oregon Department of Fish and Wildlife, is part of an effort to reestablish a viable population of peregrine falcons in Oregon. The birds made the transition to the hack box in good condition. Following release from the hack box, two birds were lost to predation. The remains of one falcon confirmed predation by a great horned owl (*Bubo virginianus*). To date, the third falcon is doing fine, is being moni-

tored by radio telemetry, and hopefully will establish a territory somewhere along the Oregon coast.

A draft Environmental Assessment/Environmental Impact Report (EA/EIR) on the San Bruno Mountain Habitat Conservation Plan and Endangered Species Section 10(a) Permit, San Mateo County, California, is available for public review and comment (F.R. 7/26/82).

**Region 2**—Little Creek in Gila National Forest (Gila Wilderness), Arizona, has been renovated to eliminate exotic brown trout (*Salmo trutta*), and barriers were built to prevent their return, which allowed reintroduction of native Gila trout (*Salmo gilae*). These activities result from the 1979 Gila Trout Recovery Plan, and are designed to help lead to an eventual downlisting of the species.

The Western Division of the American Fisheries Society held its annual meeting recently in Las Vegas, Nevada. One session was devoted to the rearing of Endangered fishes, and four of the seven papers presented at the session involve Dexter National Fish Hatchery (New Mexico). Proceedings of the session will be published separately by the U.S. Forest Service.

Dexter personnel have tagged all of the 42,000 1982 year-class of razorback suckers (*Xyrauchen texanus*) and have stocked 16,000 into historic habitat within Arizona.

**Region 3**—On July 21, five immature peregrine falcons from the University of Saskatchewan were placed on a hacking tower at Kellogg, Minnesota. The cooperative effort also involved the Service, the Minnesota Department of

Natural Resources, and The Nature Conservancy; Northern States Power donated the poles and put them in place.

The recent Michigan Department of Natural Resources (DNR) census of the State's Endangered Kirtland's warblers (*Dendroica kirtlandii*) recorded 200 singing males, a drop of 14 percent from 1981. Biologists estimate the total number of males and females to be about 400. The annual event is a cooperative effort of the Michigan DNR, the Service, and local Audubon Society chapters.

The first confirmed bald eagle (*Haliaeetus leucocephalus*) hatched in Missouri in 40 years is joining two eaglets from Minnesota at a hacking station on Mingo National Wildlife Refuge in southern Missouri. Concern for the Missouri eaglet (nicknamed "Adversity") mounted after first one parent, then the other, disappeared. Although underweight when taken from the nest, the young is eating and appears to be adapting well. The project involves the Service, the U.S. Army Corps of Engineers, and the Missouri Department of Conservation.

**Region 4**—Researchers working in cooperation with the Patuxent Wildlife Research Center have estimated that there may be 250 Everglade kites (*Rostrhamus sociabilis plumbeus*) now present in Florida. This is considerably higher than the 109 which were counted in a previous survey conducted in late 1981. The kites dispersed from their normal range following the severe drought which struck south Florida in

*Continued on page 5*



On July 21, 1982, the Newton Corner Regional Director, Howard Larsen (left) presented Gary J. Taylor (right), Nongame and Endangered Species Program Manager for the Maryland Wildlife Administration, with a Service award and Letter of Commendation, acknowledging Taylor's involvement with endangered species conservation. Taylor is the team leader of the Chesapeake Bay Bald Eagle Recovery Team and is largely responsible for the completion of the Chesapeake Bay Bald Eagle Recovery Plan, signed by the Service's Director May 19, 1982.

U.S. Fish and Wildlife Service Photo

## Rulemaking Actions—July 1982

### McKittrick Pennyroyal Listed As Threatened with Critical Habitat

The Service has listed the McKittrick pennyroyal (*Hedeoma apiculatum*) as a Threatened species and has determined its Critical Habitat (F.R. 7/13/82). This plant occurs in Texas and New Mexico.

The number of existing individuals is estimated to be less than 1,100 and their reproductive potential appears to be low. Populations occurring on Federal lands are threatened by the gradual destruction of habitat through long-term overuse, and need to be considered in plans for park development. The single known population on private land would be potentially threatened by any major change in land use.

McKittrick's pennyroyal, a member of the mint family, was first collected in 1882 but remained undescribed until 1939. A long-lived perennial herb, this plant forms dense tufts of leaves from woody rootstocks and stands 10 to 15 cm in height. Its showy pink flowers are solitary or in two to three-flowered clusters, 2 cm in length and, as with many mints, the flowers are axillary and crowded towards the apex.

*Hedeoma apiculatum* is endemic to open, limestone rock surfaces and outcrops in canyons along streamways in the Guadalupe Mountains of Texas and New Mexico at elevations above 1660 meters and is particularly vulnerable to disturbance. These plants are found in a substrate consisting mostly of sands caught in rock fissures and in weathered pockets of limestone. Both the plant and its fragile habitat could be threatened by trampling and unplanned development.

Only two comments were received following the publication of a proposed rule (F.R. 8/15/80) to list the species with Critical Habitat. The Superintendent of Guadalupe Mountains National Park in Texas commented through the Southwest Regional Director of the National Park Service on the proposed Critical Habitat. He strongly recommended, for management reasons, that the McKittrick Ridge site be deleted from the proposal. The Service, however, retained this area in the final Critical Habitat determination since it is one of the three major populations and, therefore, necessary and critical to the species' continued survival.

The Texas Organization for Endangered Species commented on the shortness of time between publication of the proposal and the date set for the public meeting (8/27/82). The Service ex-

plained an oversight which caused this unfortunate situation. No comments were received from the Governors of Texas and New Mexico. One National Park Service representative made an oral comment at the public meeting, expressing concern about the effect a Critical Habitat determination might have on park hiking trails, particularly McKittrick Ridge trail. The Service responded that it was extremely unlikely

### Hawaiian Plant Proposal Reopened for Comments

The comment period for the Service's proposal to list *Panicum carteri* (Carter's panicgrass) to be an Endangered species and determine Mokoli'i Island, Hawaii, as its Critical Habitat was reopened for 90 days (F.R. 7/29/82). This extension is intended to allow the Service to discuss the issue with local officials and receive further comments from such officials and from the public.

*Panicum carteri* is an annual grass known only to occur on Mokoli'i Island, Hawaii, and was believed to be extinct until its rediscovery in 1976. It was proposed for listing as Endangered with Critical Habitat on January 30, 1981, and comments were received until April 30, 1981. Comments received in response to that proposal included one from the Governor of Hawaii and one from the Mayor of Honolulu, both recommending against taking the proposed action.

### Service Studies Alligator Regs

The Service published an advanced notice (F.R. 7/16/82) making known its intent to review special rule 50 CFR 17.42(a) on the American alligator (*Alligator mississippiensis*), and seeking comments and suggestions regarding the workability of the current special rule. This rule regulates commercial activities with hides, meat, and parts (teeth and skulls) of American alligators. Comments and suggestions received prior to August 16, 1982, will be used to help determine whether changes are appropriate and, if so, to formulate a proposed rulemaking revising the special rule.

that they would request that the trail be moved, and stated that it is appropriate at this time to monitor the impact of hikers on this population.

The Critical Habitat for *Hedeoma apiculatum* includes the three areas in Texas where the three largest populations of the species occur. Critical Habitat was not proposed at this time for the smallest population in Guadalupe Mountains National Park (Texas), the population in Lincoln National Forest (New Mexico), or the population located on private land. These are all very small populations which are not well studied or understood, in contrast to the three areas with the larger populations which constitute the Critical Habitat. This rule becomes effective August 14, 1982.

In particular, the Service seeks the views and recommendations of those possessing information regarding the status of this species, the suitability of Mokoli'i as Critical Habitat for it, and possible beneficial or detrimental consequences likely to follow from its listing and designation of Critical Habitat. All further comments and recommendations should be submitted to the Service by October 27, 1982; please mail them to the Director (OES), U.S. Fish and Wildlife Service, Washington, D.C. 20240; or Pacific Islands Administrator, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, P.O. Box 50167, Honolulu, Hawaii 96850.

### Permit Regulations Revised

Regulations controlling the issuance of permits for activities involving Endangered and Threatened species have been revised by the Service (F.R. 7/15/82). This final rule is effective August 16, 1982.

The revision contains three distinct parts: (1) consolidation and simplification of permit requirements, (2) clarification of the schedule of permit application fees, (3) the implementation of a formal appeals procedure, and (4) procedures for objecting to issuance of permits. In addition to Part 17 (Endangered and Threatened wildlife and plants), the revision also affects Parts 13 and 16 under 50 CFR.

Address correspondence regarding this rule to the U.S. Fish and Wildlife Service, Federal Wildlife Permit Office, P.O. Box 3654, Arlington, Virginia 22203, or call 703/235-1903.

# African Elephant Special Rule Revised

The Service has published in final the revised rule (F.R. 7/20/82) regulating trade in the ivory of the Threatened African elephant (*Loxodonta africana*). This rule complements but does not amend the regulation of the species under Appendix II listing on the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

In 1978 when the species was listed under the Endangered Species Act of 1973, a special rule, still in effect, was promulgated which makes interstate and foreign commerce of the African elephant (and its parts and products) illegal. Since that time, the Service has found the restrictions on interstate commerce burdensome, ineffective, and unnecessary.

The new special rule requires all ivory imported into the United States to be marked according to the recommenda-

tions of CITES, and rescinds all interstate regulation of the species. The rule will, thereby, allow the Service to concentrate its law enforcement efforts more effectively, and counteract the African elephant's primary problems, poaching and smuggling of ivory in its raw form.

The new special rule eliminates the requirement that raw ivory must originate in and remain in a chain of trade composed of Party countries from country of origin to the U.S. Instead, the rule requires that raw ivory originate in a Party country and be exported to the U.S. from a Party country. The rule adds the requirement that raw ivory imported into the U.S. bear a punch-dye mark established by the rule, which will help assure that the ivory was legally acquired in the country of origin. An 18 month exception to this import requirement is provided. However, effective

September 20, 1982, unmarked raw ivory exported from the U.S. during this time must bear a mark provided by a Service permit.

With regard to worked ivory, the rule eliminates the requirement that it originate in a Party country and remain in a chain of trade composed of Party countries. It substitutes, instead, a requirement that worked ivory must be exported to the U.S. from a Party country.

The proposed rule covered all parts and products of the African elephant, whereas the final rule only covers ivory—adequate controls exist for live elephants and for other parts and products in the regulations that implement CITES (50 CFR 23). The rule becomes effective September 20, 1982. In general, the comments on the special rule as proposed (F.R. 7/17/82) favored its adoption. Comments that recommended changes in the proposed rule are addressed in the final rule. Other differences between the proposed and final rules are also detailed in the text of the rule.

## REGIONAL BRIEFS

*Continued from page 5*

1981, and have been found to be nesting this year in the area of Lakes Nestimmee and Tohopekaliga in Osceola County. No previous nesting records are known for this area. About 50 nesting attempts have been made so far this season with 24 young being produced. About 20 of these young probably have survived largely as the result of biologists taking unstable kite nests constructed in cattails and transferring them to stable wire baskets attached to poles (at the same height and location as the original nest). The adult kites have generally accepted the nest transfer within 30 minutes after making the change.

**Region 6**—The Black-footed Ferret Advisory Team met in Cheyenne, Wyoming, on June 22. The major item of discussion was the joint research proposal prepared by Service biologists of the Denver Wildlife Research Center and biologists with Biota Research and Consulting, Inc. The researchers were given the go-ahead by the team to do an intense and coordinated survey to determine a minimum number of black-footed ferret (*Mustela nigripes*) litters/young in the Meeteetse, Wyoming, area and to obtain dispersal information on young ferrets.

A whooping crane (*Grus americana*) from the Grays Lake NWR flock was found dead on July 15 in the San Luis Valley in southern Colorado. The bird had been spending the summer on private land near Monte Vista NWR.

Cause of death is unknown, so a necropsy will be done.

**Region 7**—The triennial survey of the breeding colony of Aleutian Canada geese (*Branta canadensis leucopareia*) on Buldir Island has been completed. The breeding population on Buldir is estimated at 280 pairs, almost a two-fold increase since the last census in 1979. Preparations are nearly completed for what could be the last large release of captive-raised Aleutian geese. The recovery team has recommended that trapping wild geese from Buldir Island and transplanting them to release is-

lands should become the primary means of establishing new breeding colonies of this Endangered subspecies of goose. Accordingly, most of the captive flock being held at Northern Prairie Wildlife Research Center will be released this August in the western Aleutians. Concurrent with this effort, a team of eight Service biologists and volunteers will capture family groups of wild Aleutian geese on Buldir and transplant them to Agattu Island. It is hoped that, when the young from these families are sexually mature, they will return to the area of their first flight (Agattu) to breed.

## CITES News—

### Bobcat Rule Suspended

A final rule (F.R. 10/14/81) authorizing the export of bobcat (*Lynx rufus*) taken during the 1981-82 season is again suspended, this time for a 4-month period (F.R. 7/15/82). This action, taken to conform with the U.S. District Court injunction prohibiting the Service from authorizing the export of bobcat after July 1, 1981, became effective July 15, 1982.

On February 3, 1981, the District Court for the District of Columbia found the Office of Scientific Authority's (OSA) guidelines for allowing export invalid and issued an injunction which prohibited the Service from authorizing export of the species under CITES. In light of this, the Service postponed the effective date of its October 1981 final rule for 60 days while it sought vacation of the injunction. However, on December 15,

1981, the District Court denied the motion of the Service to vacate the injunction on grounds that OSA failed to promulgate guidelines consistent with a previous ruling by the U.S. Court of Appeals.

Accordingly, the Service remains under court injunction prohibiting the export of bobcat and has suspended the October rule twice—first for 6 months (F.R. 1/12/81) and, now, for 4 months. Guidelines for export of bobcats in the 1982-83 season are now being developed to satisfy court requirements. After presentation of the new guidelines to the court, further notice will then be published to announce whether or not bobcats taken in the 1981-82 season may be exported. (See the November 1981 BULLETIN for more information on the October 1981 rules).

# Recovery Plan News:

## Three Plans Approved

During the past month the Service's Director approved three recovery plans for listed species: Gray Bat Recovery Plan (7/8/82), Red Wolf Recovery Plan (7/12/82), and Kendall Warm Springs Dace Recovery Plan (7/12/82).

### Gray Bat

The gray bat (*Myotis grisescens*) is perhaps the most restricted to cave habitats of any United States mammal, migrating seasonally between hibernating and maternity caves which provide specific feeding and thermoregulatory needs. It congregates in larger numbers and in fewer caves than most other North American bats, a phenomenon which, in itself, poses a serious threat to the species.

Prior to recent major declines, individual hibernating populations of gray bats contained from 100,000 to 1,500,000 or more individuals. Currently, approximately 95 percent (1,575,000 bats) of the entire known population hibernates each winter in only nine caves in southeast U.S., with more than half in a single cave. Populations are found mostly in Alabama, northern Arkansas, Kentucky, Missouri, and Tennessee, but a few occur in small portions of Florida, Georgia, Kansas, Indiana, Illinois, Oklahoma, Mississippi, Virginia, and possibly North Carolina.

The gray bat is the largest species of *Myotis* in the eastern U.S. Unlike other members of the genus, its wing membrane connects to the foot at the ankle rather than at the base of the first toe. Unlike all other bats of the eastern U.S., the gray bat has unicolored dorsal fur—all other eastern bats have distinctively bi- or tri-colored fur on their backs. Following molt in July or August, gray bats are dark gray, but they often bleach to chestnut brown or russet between molts.

### Reason for Decline

The primary cause of the gray bat's decline is human disturbance. Each arousal from hibernation by human entry into a hibernaculum is energetically expensive, using the bats' energy reserves which cannot be replaced before spring emergence. Simple arousal and movement to a new nesting place probably costs the bat as much as it would normally expend in 10 to 30 days undisturbed hibernation. Repeated entries during a single winter can exhaust the bats' limited energy reserve, resulting in high levels of mortality. Disturbance of maternity caves can cause female bats to drop nonvolant young or leave the

roost, causing a loss of precious communal body heat.

Other probable causes of gray bat decline are (1) the influence of pesticides, (2) other chemical pollutions or siltation of waterways over which gray bats forage, and (3) deforestation of areas near cave entrances and between caves and rivers or reservoirs where gray bats may feed. Cave commercialization and improper gating of cave entrances have also contributed to the species' decline.

### Recovery Actions

Since the gray bat was listed as Endangered in 1976, encouraging progress has been made. The Service has purchased Sauta Cave, an important known summer cave, and is considering other important acquisitions, including the only major gray bat hibernaculum in Kentucky. The Service also fenced and posted Cave Springs Cave, a major summer cave on the Wheeler National Wildlife Refuge in Alabama. A decade ago, the formerly large maternity colony at this cave was destroyed, and only a transient group of approximately 9,000 bats remained. Following only 2 years of protection from human disturbance, this colony has returned to maternity status and increased to more than 19,000 bats.

Acquisition and management actions have been undertaken by a number of Federal and State agencies. Especially active in acquisitions and protection of gray bat caves are Region 4 of the Service, Tennessee Valley Authority, National Park Service, U.S. Forest

Service, U.S. Army Corps of Engineers, and Missouri Department of Conservation, and the Tennessee Wildlife Resources Agency.

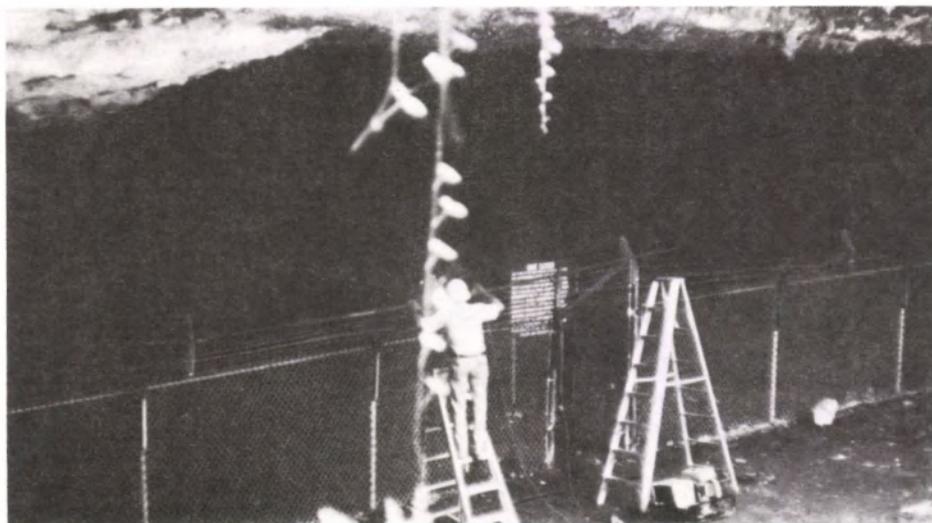
The most important recovery action called for by the Gray Bat Recovery Plan is the acquisition and protection of major gray bat caves. The immediate objective would be to reduce human disturbance in occupied caves. Protecting caves may require sign-posting, gating, fencing, and surveillance by enforcement agents. The plan also calls for the control of habitat destruction, the development of public education programs, and continued research to investigate the effects of environmental disturbance.

Implementation of the recovery plan will be initiated by the Service's Twin Cities Regional Director. Further information on the gray bat recovery effort can be obtained by contacting the Regional Director (see page 2 for address).

### Red Wolf

Very little detail regarding the life history of the red wolf (*Canis rufus*) is known since no significant studies were made when viable wild populations still existed. The species was first described by the explorer Bartram in 1791 and is thought to have consisted of three subspecies. Recent findings indicate that the only extant subspecies, *C. r. gregoryi*, once occurring from eastern Texas to eastern Mississippi, no longer survives in the wild in the pure form.

The initial decline of the species is



A standard 6-foot cyclone fence was erected across the only entrance of Cave Springs Cave on Wheeler National Wildlife Refuge, Decatur, Alabama, to restrict people from entering this major summer cave for the gray bat. Since this picture was taken, more barbed wire has been stretched across the top of the fence, providing an additional deterrent to intruders.

U.S. Fish and Wildlife Service Photo

believed to have been caused by increases in human population, changes in land use during the early 1900's, and predator control activities. As the species declined, coyotes rapidly moved into western portions of the red wolf's range. Reproductive isolation between surviving red wolf populations and the coyote broke down and led to the establishment of hybrids which invaded the final range of the red wolf in southeast Texas and southwest Louisiana.

The red wolf was listed as Endangered in 1967, and a limited Red Wolf Recovery Program was established that same year. In 1973, after passage of the Endangered Species Act, the species was selected for priority treatment, and an expanded program to save the species was initiated by the Service in cooperation with the Louisiana Wildlife and Fisheries Commission and the Texas Parks and Wildlife Department. Early program findings confirmed that the species was confronted by habitat loss, loss of young to parasites, persecution by people, and an irreversible dilution of the gene pool by invading coyotes and hybrids.

By 1975, it was concluded that it was no longer possible to preserve the red wolf gene pool in the wild. The objectives of the program then became to locate and capture as many pure members of the species as possible, preserve them in captivity, and explore the possibility of reestablishing the species in areas of its historic range. Because of hybridization and the resultant sympatric occurrence of specimens ranging in appearance from coyotelike to wolflike, the Red Wolf Recovery Program has had to be quite selective in choosing individuals that represent the red wolf subspecies *C. r. gregoryi*. Selections have been made using established minimum standards.

A captive breeding program for the red wolf had already been established in 1973 through the Metropolitan Park Board of Tacoma at the Point Defiance Zoological Garden in Tacoma, Washington. The objectives of this program, which is part of the overall recovery program, are to certify the genetic purity of wild-caught wolves, increase the number of genetically pure wolves in captivity, and maintain a red wolf gene pool for reestablishment of the species in the wild and/or distribution to selected zoological gardens.

The red wolf captive breeding program has produced pups each spring since 1977. As of July 1982, the program was maintaining 9 wild caught wolves and 45 captive-born young, varying in age from 3 months to 5 years. Although the majority of the animals remain at the program center in Tacoma, a few individuals have been distributed to other cooperating facilities.

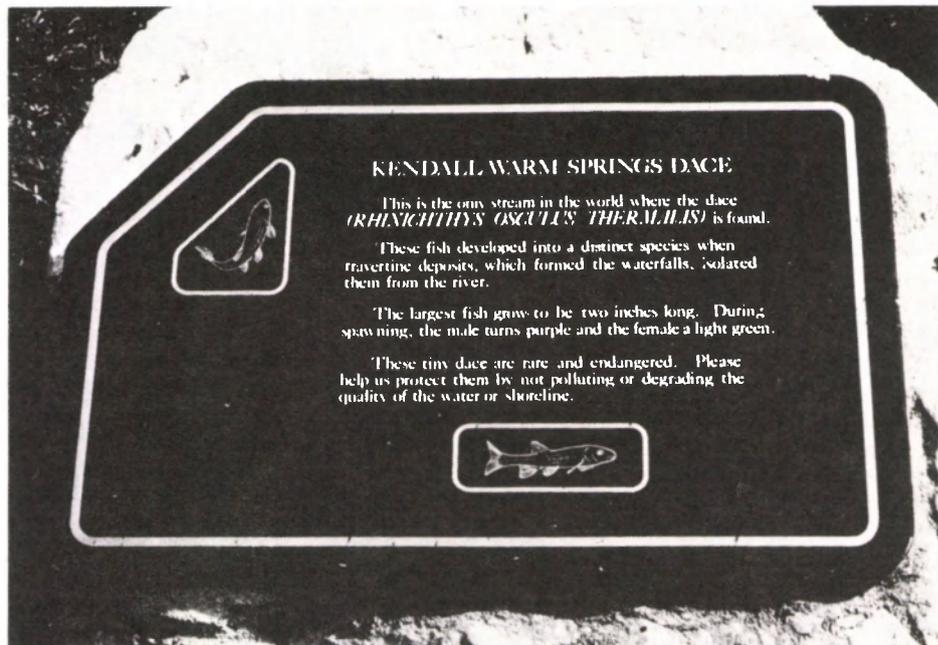


Photo by J. G. Coyners

The sign shown above is erected near the Kendall Warm Springs and outflow stream, alerting passers-by to the uniqueness of the Kendall dace habitat.

Mated pairs of adult wild-caught red wolves were experimentally released on Bulls Island in the Cape Romain National Wildlife Refuge near Charleston, South Carolina in the late 1970's. Results of this effort indicate that it is possible to reestablish adult wild caught red wolves in selected habitats in the wild. Limited experiments with wild-caught but captive reared pups in Texas also indicate that the establishment of captive-reared specimens in the wild is possible. A proposal for experimentally establishing the species in the wild was completed in early 1981 and is currently being administratively reviewed.

The ultimate goal of the Red Wolf Recovery Plan is to return the species to nonendangered status. Such a goal may be unattainable as it would require the establishment of viable self-sustaining populations throughout a major portion of the species' former range. At this time information is insufficient to determine whether viable self-sustaining populations can be established outside of strictly controlled areas.

The Red Wolf Recovery Plan essentially authorizes the actions already being executed by the Red Wolf Recovery Program. Further information on the recovery effort can be obtained by contacting the Atlanta Regional Director (see page two for address).

#### Kendall Warm Springs Dace

The Kendall Warm Springs dace (*Rhinichthys osculus thermalis*) inhabits the Kendall Warm Springs and its outflow. The habitat, which is about 300 meters long, is located on the east side of the Green River in Sublette County, Wyoming, in Bridger-Teton National Forest.

The Kendall dace, which was listed as Endangered in 1970, is the only fish inhabiting the springs. The spring water originates at near 29.4°C (85°F) and drops in temperature at the outfall to about 26.6°C (78°F) in the winter.

Dace adults range from 23 mm (0.9 in.) to 54 mm (2.1 in.) in size and prefer mainstream eddies and pools. Breeding males are often a bright purple color, but the females are typically dull olive green.

The origin of the dace is attributed to its isolation behind a travertine barrier formed at the confluence of the springs flow and the Green River. This separation provides a unique and isolated habitat, which is believed to have allowed the Kendall dace to evolve from the speckled dace (*Rhinichthys osculus yarrowi*) which occurs in the river. Additional study, however, needs to be done to clarify the relationship of the two subspecies.

Different types of activities have affected the integrity of the Kendall Warm Springs Creek for years. Livestock use has often been heavy because the springs are located along an old cattle drive. Grazing and trampling have affected both the stream and the plant life in and around the spring flowage. In 1969, the U.S. Forest Service enclosed 160 acres surrounding three sides of the spring to protect it from further impact.

Man's use of the spring to bathe and wash clothing has caused one of the most potentially harmful impacts to the aquatic community. Invertebrate samplings taken around 1975 suggested that the use of soaps and detergents had depressed the aquatic community.

Continued on page 8

## New Publications

A New Service publication, "Wolf Depredation on Livestock in Minnesota," by Steven H. Fritts (Resource Publication 145, February 1982) is now available free of charge. Single copies may be requested from the U.S. Fish and Wildlife Service, North Central Forest Experiment Station, 1992 Folwell Avenue, St. Paul, Minnesota 55108.

1981 *Potentialia robbinsiana* Educational Program and Hiker Survey by Dorothy T. Taylor, Research Department of the Appalachian Mountain Club is now available for \$2.50. Write Dorothy T. Taylor, Appalachian Mountain Club, Pinkham Notch Camp, Gorham, New Hampshire 03581 to purchase a copy.

A limited quantity of the "Proceedings of the U.S. Strategy Conference on Biological Diversity, November 16-18, 1981," is available from the Service. To request a single copy, please write the Director (OES), U.S. Fish & Wildlife Service, 18th and C Streets, N.W., Washington, D.C. 20240.

A cumulative index of the *Endangered Species Technical Bulletin* (July 1976-December 1981) is now available. Copies may be requested by writing the Office of Endangered Species, U.S. Fish and Wildlife Service, 18th and C Streets, N.W., Washington, D.C. 20240.

## RECOVERY PLAN NEWS

*Continued from page 7*

To protect against this, the Forest Service closed the waters to bathing or wading and prohibited the use of soaps, detergents, or bleaches. A barrier was erected to prevent vehicles from driving into the springs.

For many years the Kendall dace was

## BOX SCORE OF SPECIES LISTINGS

Category	ENDANGERED			THREATENED			SPECIES* TOTAL
	U.S. Only	U.S. & Foreign	Foreign Only	U.S. Only	U.S. & Foreign	Foreign Only	
Mammals	15	18	223	3	0	22	281
Birds	52	14	144	3	0	0	213
Reptiles	7	6	55	8	4	0	80
Amphibians	5	0	8	3	0	0	16
Fishes	28	4	11	12	0	0	55
Snails	3	0	1	5	0	0	9
Claims	23	0	2	0	0	0	25
Crustaceans	2	0	0	0	0	0	2
Insects	7	0	0	4	2	0	13
Plants	52	2	0	8	1	2	65
<b>TOTAL</b>	<b>194</b>	<b>44</b>	<b>444</b>	<b>46</b>	<b>7</b>	<b>24</b>	<b>759</b>

\*Separate populations of a species, listed both as Endangered and Threatened, are tallied twice. Species which are thus accounted for are the gray wolf, bald eagle, American alligator, green sea turtle, and Olive ridley sea turtle.

Number of species currently proposed: 9 animals  
7 plants

Number of Critical Habitats listed: 52  
Number of Recovery Teams appointed: 69  
Number of Recovery Plans approved: 57  
Number of Cooperative Agreements signed with States:  
38 fish & wildlife  
11 plants

July 31, 1982

commonly used as fish bait. However, in the early 1960's the Wyoming Game and Fish Department stopped issuing permits to seine or trap the dace.

A road which was built in 1934 and is still the main transportation route for access into the upper Green River and the northern end of the Bridger Wilderness, impacts the Kendall dace habitat at one point where about 25 feet of the stream was replaced by culverts. Culverts may prevent upstream movement of the dace, isolating the upper half of the population.

The objective of the Kendall Warm Springs Recovery Plan is to recover the species through maintenance of current

population levels and protection of the existing habitat. The plan also calls for additional taxonomic studies and habitat related research.

Implementation of the recovery plan will be initiated by the Service's Denver Regional Director and through the Denver Regional Endangered Species Staff. Further information on the Kendall Warm Springs dace recovery effort can be obtained by contacting the Regional Director (see page 2 for address).

Copies of all three recovery plans will be available in four to six months from The Fish and Wildlife Reference Service, Denver Public Library, 3840 York Street, Denver, Colorado 80205.

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# ENDANGERED SPECIES

## Technical Bulletin

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