

ENDANGERED SPECIES

Technical Bulletin

Department of the Interior, U.S. Fish and Wildlife Service, Washington, D.C. 20204

Emergency Action is Taken to Protect the Golden-cheeked Warbler

Under the emergency listing provision of the Endangered Species Act, the Fish and Wildlife Service has classified the golden-cheeked warbler (*Dendroica chrysoparia*) as Endangered. This small, insectivorous songbird breeds only in parts of central Texas, where its woodland nesting habitat is rapidly being cleared for urbanization and range management. The emergency listing rule, published in the May 4, 1990, *Federal Register*, took effect immediately and will protect the warbler and its habitat for 240 days. A separate proposal to give the species long-term protection accompanied the rule.

Habitat Requirements

Golden-cheeked warblers winter in Guatemala, Honduras, Nicaragua, Mex-

ico, and possibly Belize. In mid-March, they arrive at their breeding range in Texas, which extends from Palo Pinto and Bosque Counties southward through the eastern and south-central portions of the Edwards Plateau. This region coincides closely with the range of the Ashe juniper (*Juniperus ashei*), a tree the warbler depends upon for its survival.

Golden-cheeked warblers have very specific habitat requirements. Fairly large areas of mature Ashe juniper and oak (*Quercus* spp.) woodlands are needed to support a population. The male birds, which arrive in Texas first, establish territories ranging in size from 3 to 10 acres (1.2 to 4.0 hectares). Ashe junipers not only provide nesting sites but also the material from which the nests are constructed. Warblers take strips of juniper bark, which the trees shed when mature,

and bind them with cobwebs to form a compact cup. Even nests built in other species of trees contain long strips of Ashe juniper bark. Deciduous oaks of various species also are critical; they are another source of nesting and perching sites, and they provide essential habitat for the insects upon which warblers feed.

Threats to the Habitat

In 1948, a juniper eradication program was launched in Texas. From the 1950's to the 1970's, approximately 50 percent of the juniper acreage in mid-Texas was developed for pasture and urbanization. At one time, most of the wood was used for fence posts, fuel, and aromatic oils, but now much of it is burned at the

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In breeding plumage, the male golden-cheeked warbler has yellow cheeks outlined in black with a black stripe extending through the eye to the side of the nape. Its crown, upperparts, throat, neck, upper breast, and streaking along the flanks are jet black. The wings are black with two distinct white bars, and the tail is blackish.

photo by Don Bleitz



ciation, Nez Perce Tribe, Boise State University, and Senator McClure's office. The Fish and Wildlife Service served as an advisor and consultant for this conference, which focused on gray wolf (*Canis lupus*) ecology in general. Considerable discussion centered on wolf recovery funding and legislative proposals by Congressman Owens and Senator McClure regarding wolf reintroduction in Yellowstone National Park. The conference was videotaped for later use by agencies and public television. The videotapes are now being edited and should be available in the fall from the Wolf Recovery Foundation, P.O. Box 793, Boise, Idaho 83701 (telephone: 208-939-4290).

Regional endangered species staffers have reported the following news:

Region 1 - The International Wolf Pack Conference, held April 28, 1990, at Boise State University, was attended by over 70

people, including representatives from the Defenders of Wildlife, National Wildlife Federation, Greater Yellowstone Coalition, Idaho Conservation League, Idaho Hunters Association, Sierra Club, Idaho Wool Growers, Independent Miners Asso-

Two of the woodland caribou (*Rangifer tarandus caribou*) in the Endangered southern Selkirk Mountain herd on the British Columbia/Idaho border were reported by the Idaho Department of Fish and Game to have died during the week of May 11. Both caribou were radio-collared cows. One of the cows, which was in the area before the effort to augment the herd began, was hit by a car on Canada Highway 3 at Salmo Pass. The remains of this animal will be placed in the Paleontology Museum at Idaho State University, Pocatello, for educational purposes. The other caribou, which had been moved to the herd in 1988, was found partially consumed by a bear at the base of a steep hillside. The cow may have been fatally injured while coming down the hillside or killed by the bear. The current population of the herd is conservatively estimated at 60 to 70.

The Service's Laguna Niguel, California, Field Station recently established a working group to promote conservation of the California gnatcatcher (*Polioptila californica*), a Category 2 listing candidate. This bird, which is endemic to coastal sage scrub habitat, is declining in both distribution and abundance due to widespread destruction of its specialized habitat. The field station has initiated a status review to determine if this species should be proposed for listing as Endangered or Threatened.

Region 2 - The 1990 spring count of Attwater's greater prairie-chickens (*Tympanuchus cupido attwateri*) in Texas indicated that the population has increased from last year, although the overall trend for these Endangered birds over the past several years has been downward. The 1990 increase is probably the result of a more intensive count than in previous years. Traditionally, a single helicopter is

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Investigating the Potential for Reintroducing Red Wolves Into the Great Smoky Mountains National Park

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The Fish and Wildlife Service has been working for the past 18 months with National Park Service personnel on investigations that may lead to a reintroduction of the red wolf (*Canis rufus*) in the Great Smoky Mountains National Park. Straddling the North Carolina-Tennessee border, this 500,000-acre (200,000-hectare) park is surrounded by approximately 1.5 million acres (600,000 ha) of National Forest lands. It is the most heavily visited unit in the National Park System.

The red wolf was extinct in the wild until 1987, when the Fish and Wildlife Service began reintroducing captive-bred stock onto Alligator River National Wildlife Refuge in northeastern North Carolina. Establishing a second wild population would be an important step toward the eventual recovery of this seriously Endangered species.

Wolf/Coyote Problems

One of the most difficult problems associated with the red wolf recovery effort relates to the decline of the last wild population. By the 1970's, years of predator control and habitat conversion had reduced the species' range from much of the southeastern United States to a small area near the Texas/Louisiana border. The few remaining red wolves were in generally poor shape, plagued by disease and a host of parasites. With its low numbers and weakened condition, the population then faced an invasion of its habitat by coyotes (*Canis latrans*), which are generally more resistant to predator control efforts and more adaptable to habitat alteration. When red wolves found it difficult to find mates during the breeding season, social barriers that had separated the two species apparently broke down, and interbreeding became a serious problem. In the mid-1970's, biologists captured the last few red wolves for captive breeding before the species was lost to hybridization.

Recent attempts to reintroduce captive-bred red wolves into the wild have met with initial success in coastal North Carolina. (See BULLETIN Vol. XIV, Nos. 1-2 and 11-12.) It is important to note that this area is currently free of coyotes. On the other hand, about 90 percent of the red wolf's historical range, including the Great Smoky Mountains National Park, is now occupied by coyotes in varying densities.



Great Smoky Mountains National Park could be the second permanent reintroduction site for the red wolf.

There is currently a low to moderate population of coyotes in the park.

Investigations indicate that a hierarchy exists among various canid species in the wild. Where gray wolves (*Canis lupus*) survive in North America, resident coyote populations tend to avoid the wolves' home range. Canadian researchers report the killing of intruding coyotes by gray wolves. Although little is known about red wolf interactions with other canids, it is thought that a small but stable population of red wolves would effectively replace an existing coyote population or possibly establish a sympatric relationship. If this can be demonstrated through carefully conducted field experiments, then the site may be biologically suitable for permanent reintroduction, and the recovery potential for the red wolf would be significantly enhanced.

Can Wolves Survive in the Park?

The first phase of the project at the Great Smoky Mountains National Park began in March of 1990. Dr. Michael Pelton, a noted black bear (*Ursus americanus*) researcher at the University of Tennessee, was awarded a contract to investigate coyotes in the southwestern quadrant of the park. As many coyotes as possible will be radio-collared and tracked. Although this study was designed to provide basic biological information about this recent immigrant into the park, it is specifically geared at defining home ranges.

This initial stage of the project will end in March of 1991. Prior to that time, several adult pairs of red wolves will be brought to the park and acclimated in holding pens within the coyote study area. After 5 or 6 months, the wolves will be fitted with radio collars and released.

Intensive telemetry monitoring will last for several months; it will then probably be scaled back as the animals become more predictable in their movements. It is presumed that interactions between the two species will begin shortly after the wolves are released. Experiences with red wolves at Alligator River indicate that there could be severe strife between individual red wolf pairs as they quickly attempt to stake out their respective home ranges.

Upon completion of this project phase (about March 1991), efforts to recapture all of the released wolves will begin. If a careful assessment of telemetry and field observational data indicates that the released red wolves did replace resident coyotes, then a permanent reintroduction phase will be developed. However, if the study results are not clear and the wolf/coyote issue is not resolved, then some difficult decisions will have to be made about the program.

The probable future recovery direction for the red wolf hinges on this project. If it is determined that the species cannot cope with resident coyote populations, it may have to be restricted essentially to small island populations with heavy dependence on the continued release of captive-bred wolves.

Fish and Wildlife Service photo

Proposed Listings — May 1990

Four species—two fishes, a bird, and a plant—were proposed by the Fish and Wildlife Service during May 1990 for listing as Endangered or Threatened. If the listing proposals are approved, Endangered Species Act protection will be extended to the following:

Razorback Sucker (*Xyrauchen texanus*)

The razorback sucker, also known as the humpback sucker, is endemic to the Colorado River Basin from Wyoming to Mexico. It is one of the oddest-looking freshwater fishes in North America. Adult razorback suckers are easily identified by a bony, sharp-edged hump or dorsal keel that rises at a steep angle behind a flat, sloping head and by their large, fleshy mouths. The distinctive dorsal keel stabilizes the fish in turbulent waters and strong currents. Adults often exceed 6 pounds (2.7 kilograms) in weight and 24 inches (60 centimeters) in length, and can live more than 30 years. Their preferred habitat is warm, flowing water over sand, gravel, or rocky bottoms, where they feed on algae, plankton, insects, and decaying organic matter. Adult fish may migrate considerable distances to specific areas to spawn.

This species once was abundant throughout the 3,500 miles (5,635 kilometers) of the basin, occurring primarily in the mainstem and major tributaries in Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, and the Mexican States of Sonora and Baja California Norte. There was a significant commercial fishery for razorbacks in southern Arizona in the early 1900's. As recently as 1949, one fisherman caught 12,000 pounds (5,450 kg) of razorback suckers in one season from Saguaro Lake below the Roosevelt Dam on the Salt River.

Since 1910, 15 dams have been built on the lower Colorado River and major tributaries, greatly altering the razorback sucker's habitat. The dams and their reservoirs reduced high spring flows (essential for maintaining side-stream habitats used by the razorback suckers), changed the daily flow regimes and water temperatures that are necessary for the fish at all life stages, and obstructed migration. Other less direct effects of the dams, such as decreased flows, alteration of stream hydrology, and increased concentrations of dissolved solids, also may be adversely affecting the razorback sucker.

Alteration of historical flow regimes and construction of reservoirs created favorable conditions for the spread of nonnative fishes. Introduced species such as carp (*Cyprinus carpio*), channel catfish (*Ictalurus punctatus*), red shiner (*Notropis lutrensis*), largemouth bass (*Micropterus salmoides*), walleye (*Stizostedion*

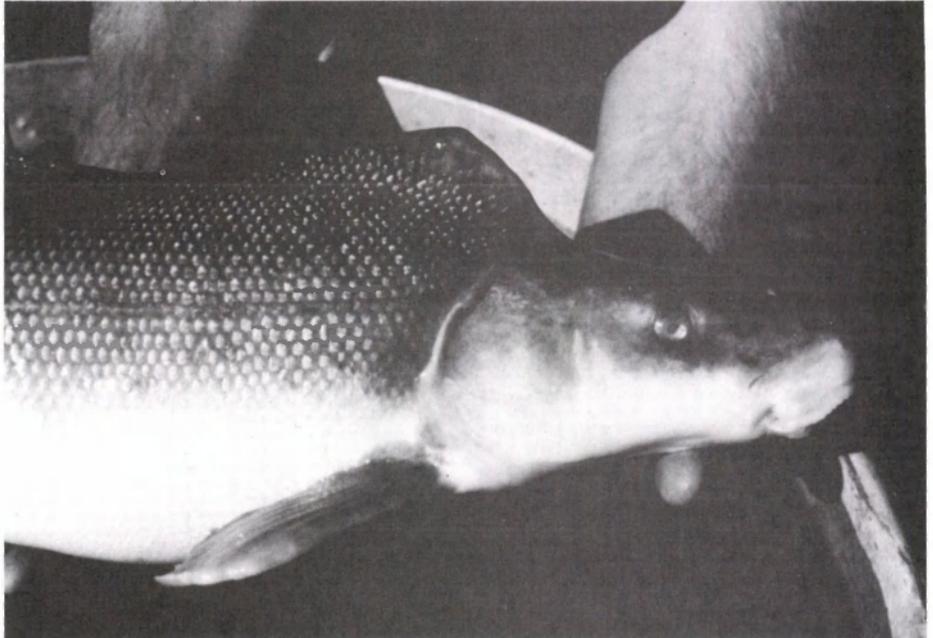


photo by C. W. McAda and R. S. Wydoski

The razorback sucker's main distinguishing characteristic is its sharp-edged hump or dorsal keel.

vitreum), and northern pike (*Esox lucius*) prey on razorback sucker eggs and larvae or compete with razorbacks for food and space. The introduction of nonnative fishes into the Colorado River Basin is believed to be a major cause for the lack of young razorback suckers throughout the basin for the past 30 years. There is considerable evidence that the remaining razorback populations are composed primarily of old individuals that are slowly dying off.

As a result of these environmental changes, the razorback sucker apparently inhabits less than 35 percent of its original range and is considered by most researchers to be one of the rarest endemic species in the Colorado River Basin. The fish is now distributed unevenly within about 750 miles (1,200 km) of the upper basin and 400 miles (640 km) of the lower basin. The largest remaining population is probably in Lake Mohave (Arizona and Nevada).

The loss and alteration of habitat continues to threaten the razorback's survival. Several major reservoirs and water diversion projects are in the planning process or under construction, including the Animas-La Plata Project, Muddy Creek Reservoir, Sandstone Reservoir, and Central Utah Project. The introduction and spread of nonnative species also continues.

The Sierra Club, National Audubon Society, Wilderness Society, and several other environmental groups submitted a petition to the Service on March 15, 1989, requesting that the razorback sucker be listed as an Endangered species. After assessing the best available information

regarding the threats to the razorback sucker, the Service proposed that the species be listed as Endangered (F.R. 5/22/90).

The Service is already taking action aimed at conserving the razorback. For example, the Service's Southwest Region has entered into memoranda of understanding with the States of Arizona and New Mexico for stocking razorbacks into a variety of habitats in the lower basin. Although 9.5 million larvae and juvenile fish have been released so far, it is not clear that this effort has successfully reestablished the fish. Under Section 7 of the Act, the Service also is consulting with other Federal agencies on the effects that water development projects may have on three listed fishes that share the razorback sucker's habitat. Measures taken to conserve habitat of the Colorado squawfish (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and bonytail chub (*Gila elegans*) could benefit the razorback.

Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)

This large fish, a subspecies of the Atlantic sturgeon, is native to the northern Gulf of Mexico from Lake Ponchartrain, Louisiana, to Tampa Bay, Florida. Although it is an anadromous fish, the Gulf sturgeon spends most of its life in fresh water and depends on unimpeded rivers for spawning habitat. Due to dam construction and overfishing, breeding populations have declined or even disap-

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Proposed Listings

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peared in much of the fish's historical range. The Service has proposed to list this subspecies as Threatened (F.R. 5/2/90).

Although the Gulf sturgeon is still reported, at least occasionally, from scattered parts of its former habitat, the largest known remaining populations are in the panhandle and northwest coasts of Florida. The Suwannee River is believed to support the healthiest population. Important habitat in other major river systems — the Pearl in Mississippi, the Alabama in Alabama, and the Apalachicola in Florida — is now blocked by dams. Gulf sturgeon apparently are unable to pass through dam and lock systems. Dredging and spoil deposition in connection with channel maintenance threaten some of the limited spawning habitat that does remain. Because the fish probably return to their natal river to breed, a river's entire sturgeon population can be lost if the spawning habitat is blocked or degraded.

The Gulf sturgeon historically has been of commercial importance, with the eggs used for caviar, the flesh for smoked fish, and the swim bladder for making isinglass (a gelatin used in food products and glues). Recorded catches peaked around the turn of the century and have declined drastically since then. Although there is no longer a fishery directed at the Gulf sturgeon, incidental take by shrimpers and gill netters may be significant. The

use of turtle excluder devices (TEDs) on shrimp trawls may help to reduce the incidental catch of large finfish such as the sturgeon as well as sea turtles. Take of Gulf sturgeon is prohibited under State law in Florida, Louisiana, and Mississippi.

Work to conserve the Gulf sturgeon already is being done by the Service's Panama City (Florida) Fisheries Assistance Office; the Service's Gainesville (Florida) National Fisheries Research Center; and the private Caribbean Conservation Corporation (funded by the Phipps Florida Foundation). A management plan will be prepared next year by the Gulf States Marine Fisheries Commission. Future recovery activities for the Gulf sturgeon, if it is listed, could include development of hatchery propagation facilities and protection of the remaining spawning habitat.

Texas Trailing Phlox (*Phlox nivalis* ssp. *texensis*)

This plant, a member of the family Polemoniaceae, is a clump-forming perennial with spreading or trailing shoots. Its attractive flowers are purple-lavender, deep rose, pink, or white in color, and appear from late March to early April. The species is endemic to the Big Thicket Forest region of eastern Texas.

The Texas trailing phlox was known historically from 17 locations, but a 1989 survey by the Texas Natural Heritage Program found plants at only 2 sites. The largest population occurs on a Hardin County preserve owned by The Nature Conservancy, where several hundred phlox are scattered across a fire-main-

tained pine savanna. A second population consisting of only six clumps of flowering plants was found at the edge of a pine plantation in Tyler County. Continuing threats to the remaining plants have prompted a proposal to list the Texas trailing phlox as an Endangered species (F.R. 5/29/90).

Urbanization and large-scale land clearing for pine plantations have claimed large portions of native habitat in eastern Texas and are responsible for much of the species' decline. Recently, pipeline construction also destroyed a once thriving population. Even the plants on the Conservancy's property could be affected by aerial drift from herbicides applied by airplane to nearby timber lands. The suppression of wildfires also has reduced the amount of suitable habitat. Openings in the forest, needed by the phlox, historically were created or maintained by fire. In the absence of burning, some former sites have been overwhelmed by competing vegetation. On the Conservancy tract, however, a prescribed burning and slash pine removal program has enhanced phlox habitat.

Golden-cheeked Warbler (*Dendroica chrysoparia*)

Concurrent with the May 4 emergency rule giving the golden-cheeked warbler immediate but temporary protection as an Endangered species (see BULLETIN page 1), the Service published a proposal to grant this small songbird long-term coverage under the Act.



Gulf sturgeon are large fish that can attain total lengths of 8 feet (2.4 meters) or more. Their skin is scaleless, brown above and pale below, and imbedded with five rows of bony plates.

photo by Noel Burkhead

Two Gray Wolf Packs Discovered in Northern Washington

Biologists recently located two active gray wolf (*Canis lupus*) packs with pups in the North Cascades area of Washington, the first ones known within the State in recent times. Once relatively common, the wolf was essentially extirpated from the State by the early 1900's as a result of trapping for pelts and predator control. In recent years, however, there have been reports of wolf sightings in the Cascades and northeastern Washington, and wolf tracks were confirmed in the North Cascades last year.

On May 23, 1990, biologists with the National Park Service and Washington Department of Wildlife discovered a den within the Hozomeen section of the Ross Lake National Recreation Area near the Canadian border. Although the biologists

kept away from the den to avoid disturbing the wolves, howls coming from the site indicated the presence of pups and adults. Another possible wolf den or rendezvous site was discovered by biologists with the State and the U.S. Fish and Wildlife Service on June 18 while they were conducting a survey for wolves in the Okanogan National Forest of northcentral Washington. The biologists elicited howls from pups and adults near the Pasayten Wilderness, northwest of Winthrop. Both packs have moved since they were discovered and have not been relocated. When the pups are weaned, it is normal for wolf packs to move to a rendezvous site in July or August. The pups will be mature by late fall, when the packs begin moving into winter home ranges.

The discovery of these wolf packs is exciting news for the gray wolf recovery effort. To protect the pups in the Ross Lake National Recreation Area, the National Park Service closed the Hozomeen area to public use through June. The Park Service also has closed the Hozomeen backcountry to all dogs to reduce the possibility of spreading canine parvo virus to the wolf pups. (Many domestic dogs carry the disease, which is transmitted through urine or feces. Canine parvo virus usually leads to death by dehydration.) As a result of the evidence that wolves are present in northern Washington, the Fish and Wildlife Service has prepared a contingency plan to address wolf depredation, similar to plans already developed in Idaho and Montana.

Golden-cheeked Warbler

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cleared sites. Widespread losses of juniper/oak woodlands continue, especially in the eastern section of the Edwards Plateau. This rapidly urbanizing area, which reaches from Austin to San Antonio, contains much of the warbler's best remaining habitat.

According to a recent status survey, 15 to 45 percent of the warbler's nesting habitat has been lost over the past 10 years. If current trends continue, the estimated maximum carrying capacity of the remaining warbler habitat will fall more than 50 percent by the year 2000. Because of the species' narrow ecological requirements and its habit of returning to the same area every year, habitat destruction can lead to the elimination of entire populations.

As the breeding range shrinks and becomes fragmented, the golden-cheeked warblers become increasingly vulnerable to predators and nest parasitism by brown-headed cowbirds (*Molothrus ater*). An adaptable species, the cowbird frequently expands in range and numbers as people alter native habitat. Cowbirds lay their eggs in the nests of other bird species for them to incubate, and young cowbirds usually out-compete other nestlings for food and space.

Effects of the Rule

All protective measures authorized by the Endangered Species Act now apply to the golden-cheeked warbler and its habitat. Among the conservation benefits authorized by the Act for listed species are: protection from adverse effects of Federal activities; restrictions on take and trafficking; the requirement for the Service

to develop and implement recovery plans; the authorization to seek land purchases or exchanges for important habitat; and Federal aid to State and Commonwealth conservation departments that have approved cooperative agreements with the Service. Listing also lends greater recognition to a species' precarious status, which encourages other conservation efforts by State and local agencies, independent organizations, and concerned individuals.

Section 7 of the Act directs Federal agencies to use their legal authorities to further the purposes of the Act by carrying out conservation programs for listed species. It also requires these agencies to ensure that any actions they fund, authorize, or carry out are not likely to jeopardize the survival of listed species. If any agency finds that one of its activities may affect a listed species, it is required to consult with the Service on ways to avoid jeopardy.

Additional protection is authorized by Section 9 of the Act, which makes it illegal to take, possess, transport, or engage in interstate or international trafficking in listed animals except by permit for certain conservation purposes. Included within the definitions of "take," as described in the Code of Federal Regulations (50 CFR 17.1), are actions that kill or injure wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, and sheltering. Thus, the removal of trees in Ashe juniper/oak woodlands could be prohibited in some circumstances. However, developed areas and small tracts may not contain suitable golden-cheeked warbler habitat, and therefore may not be affected by the rule. Landowners and managers are being encouraged to contact the Service (711

Stadium Drive East, Suite 252, Arlington, Texas 76011; telephone 817/885-7830) to see what restrictions apply.

Final Rule Published for the Neosho Madtom

The Neosho madtom (*Noturus placidus*) is a small catfish, averaging less than 3 inches (7.5 centimeters) long, with mottled skin. It is restricted to the Neosho River and two tributaries, the Cottonwood and Spring Rivers, in southeastern Kansas, southwestern Missouri, and northeastern Oklahoma. This species is almost always found in riffle areas within free-flowing stretches of these rivers. Habitat destruction and modification, primarily the result of impoundments, water withdrawals, and dredging for sand and gravel, have reduced the madtom's distribution and abundance, and have isolated the remaining stock into three populations. The construction of new dams, additional water withdrawals, and water pollution are potential threats to the remaining populations.

The Service proposed listing the Neosho madtom as a Threatened species in the May 19, 1989, *Federal Register* (see BULLETIN Vol. XIV, No. 6), and the final rule was published May 22, 1990.

Regional News

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used to count the prairie-chickens on their booming grounds. This year, however, the helicopter flight was combined with an intensive ground count. A total of 494 birds were counted, which is a 14-percent increase from 1989 (432 birds). Since the 1989 count probably missed some birds, it seems likely that the overall prairie-chicken population has increased only slightly. There continued to be localized fluctuations; colonies in some counties declined considerably since last year, while others unexpectedly increased.

The Service is trying to purchase two areas of suitable habitat to manage for prairie-chickens, and is also working with the Texas Parks and Wildlife Department to encourage private landowners to maintain and improve prairie-chicken habitat on their lands. Virtually all habitat outside of the Attwater Prairie-chicken National Wildlife Refuge is privately held. Endangered Species Act/Section 6 funds, as well as private and corporate donations, will be used to map and count colonies in the State, assess habitat, and establish priorities for providing technical assistance to landowners. Section 6 funds are also being used to develop translocation techniques.

Region 4 - Using Section 6 funding, the Mississippi Museum of Natural Science, a division of the Mississippi Department of Wildlife, Fisheries, and Parks, has completed 2 years of research on the ringed sawback turtle (*Graptemys oculifera*). This Threatened species occurs only in the Pearl River drainage of southwestern Mississippi and southeastern Louisiana. Using innovative mark and recapture techniques, museum researchers documented that although ringed sawback turtle abundance can exceed 300 turtles per kilometer of river in optimal habitat, the density is far less in most areas. The research also highlighted two natural factors that limit the species' abundance: females are probably 9 to 11 years old before they attain sexual maturity, and their reproductive potential is low. The study documents that the major threats to the turtle include habitat loss (sandbars for nesting and snags for basking), killing by humans, and probably water pollution.

In mid-January, the Service moved an adult pair of Endangered red wolves (*Canis rufus*) from the Tallahassee Junior Museum to St. Vincent National Wildlife Refuge in Apalachicola, Florida, to establish another island propagation site (see BULLETIN Vol. XIV, Nos. 11-12). (Four wolf pups from this adult pair, born in April 1989, are still on display at the outdoor

museum.) In April 1990, the adult pair gave birth to two pups while they were being acclimated in an enclosure on the island. The entire family is reported to be healthy and doing fine. This summer, a veterinarian will surgically implant radio transmitters in the pups, the two adults will receive new radio collars, and all of the wolves will be released on the island. Eventually, the pups will be recaptured and taken to a mainland release site.

The St. Vincent site is one of three island propagation sites established by the Service to provide stock for permanent red wolf reintroductions on the mainland. Other propagation projects are on Bull's Island, South Carolina (a component of Cape Romain National Wildlife Refuge), and Horn Island, Mississippi (part of the National Park Service's Gulf Islands National Seashore). Several island-reared pups have been released successfully at Alligator River National Wildlife Refuge in North Carolina. The Service is also considering the Great Smoky Mountains National Park on the North Carolina/Tennessee border as another release site. (See related story in this edition.)

Region 5 - New England supported a growing population of wintering bald eagles (*Haliaeetus leucocephalus*) in 1989-90. Observers reported 56 eagles overwintering in Massachusetts (12 more than last year), an estimated 30 eagles in New Hampshire, and about 90 eagles in Connecticut. In Maine, the majority of bald eagles are coastal birds that do not migrate in the traditional sense. Some do fly down from Canada to Maine for the winter, while others, particularly immature birds, leave Maine to winter in Connecticut and Massachusetts. It is estimated that a total of 200-300 eagles overwinter in Maine.

Concern for the Karner blue butterfly (*Lycaeides melissa samuelis*), a Category 2 listing candidate, heightened recently with reports that its numbers are apparently declining throughout most of its range in the Northeast. The New Hampshire population fell from an estimated 2,000 to 3,000 pairs in 1983 to 600 to 700 pairs in 1990. New York reports a decline of 85 to 98 percent in most of its populations since 1979.

Staff from the Service's New England Field Office in Concord, New Hampshire, met several times with representatives of the New Hampshire Natural Heritage Inventory and The Nature Conservancy to identify ways of protecting remnants of pine barren habitat in the Concord area, the last foothold for the Karner blue in New England.

Other populations of this butterfly occur in Region 3, where it is known from Minnesota, Wisconsin, Ohio, Michigan, and Indiana. Populations of the Karner blue in these States are being resurveyed this year.

The peregrine falcon (*Faico peregrinus*) breeding season in the Northeast is well under way. As of the end of May, there were seven pairs in New Hampshire, two pairs in Massachusetts, and about five pairs in both Vermont and Maine. Particularly cool and wet weather in May, however, is suspected to have contributed to at least two nest failures in New Hampshire.

Region 8 - The Service's Southwest Research Group in Ventura, California, reported that all of the Andean condors (*Vultur gryphus*) released in 1989 in southern California have been successfully recaptured and returned to captivity (see BULLETIN Vol. XV, No. 3). The six Andean condors released in 1990 are all doing well, and are roosting, soaring, and feeding together.

The Patuxent Wildlife Research Center's Hawaii Research Group has begun monitoring nesting success of the palila (*Loxiodes bailleui*), an Endangered bird that lives only on the island of Hawai'i (the "Big Island"). As of May 1990, 15 active nests had been located in the Pu'u La'au study area on the upper slope of Mauna Kea. Many of the nests are being used by previously banded adults.

Region 9 - The U.S. Department of Agriculture recently requested reinitiation of formal consultation under Section 7 of the Endangered Species Act on its nationwide Animal Damage Control Program. In response, the Fish and Wildlife Service has appointed a national consultation team consisting of knowledgeable biologists from each of the Service's affected Regions. The team is evaluating the effects of all animal damage control activities on listed species.

New Publication

Beacham Publishing, Inc., and the World Wildlife Fund have jointly produced *The Official World Wildlife Fund Guide to Endangered Species of North America*. Three years in the making, this reference describes the appearance, behavior, habitat, population, range, threats to survival, and recovery efforts for 547 federally listed Threatened and Endangered species — all of the species listed through November 1989. The 1,258-page guide is divided into two volumes: Volume I covers plants and mammals; Volume II covers birds, reptiles, amphibians, fishes, mollusks, crustaceans, snails, insects, and arachnids. A bibliography is included for each species, and photographs are included for almost all of the species. Appendices list the species state-by-state, and locator maps provide geographic data.

A companion book, the *Endangered Species Photo Locator*, lists all of the sources used for the photographs appearing in the guide. This 73-page softcover book is divided into two sections: the first lists species with the names of people who have photographed them, and the second lists the photographers with a composite list of the photographs they provided to the publisher. Addresses of the photographers are included in the book.

The *Official World Wildlife Fund Guide to Endangered Species of North America* is available for \$195.00 from Beacham Publishing, Inc., 2100 S Street, N.W., Washington, D.C. 20008. In the interest of making this reference available to a wider community, however, the publisher has established a special purchase program: those purchasing one set at full list price may purchase additional sets at half price (\$95.00). The *Photo Locator* is available for \$12.00. Add 5 percent of your total order to cover shipping.

BOX SCORE LISTINGS AND RECOVERY PLANS

Category	ENDANGERED		THREATENED		LISTED SPECIES TOTAL	SPECIES WITH PLANS
	U.S.	Foreign Only	U.S.	Foreign Only		
Mammals	53	244	8	22	327	25
Birds	76	145	11	0	232	61
Reptiles	15	59	17	14	105	24
Amphibians	6	8	5	0	19	5
Fishes	51	11	33	0	95	47
Snails	3	1	6	0	10	7
Clams	36	2	1	0	39	28
Crustaceans	8	0	2	0	10	4
Insects	11	1	7	0	19	12
Arachnids	3	0	0	0	3	0
Plants	173	1	57	2	233	106
TOTAL	435	472	147	38	1092*	319 **

Total U.S. Endangered **435** (262 animals, 173 plants)

Total U.S. Threatened **147** (90 animals, 57 plants)

Total U.S. Listed **582** (352 animals, 230 plants)

* Separate populations of a species that are listed both as Endangered and Threatened are tallied twice. Those species are the leopard, gray wolf, grizzly bear, bald eagle, piping plover, roseate tern, Nile crocodile, green sea turtle, and olive ridley sea turtle. For the purposes of the Endangered Species Act, the term "species" can mean a species, subspecies, or distinct vertebrate population. Several entries also represent entire genera or even families.

** There are 264 approved recovery plans. Some recovery plans cover more than one species, and a few species have separate plans covering different parts of their ranges. Recovery plans are drawn up only for listed species that occur in the United States.

Number of Cooperative Agreements signed with States and Territories: 51 fish & wildlife
36 plants

June 30, 1990

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ENDANGERED SPECIES

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