

ENDANGERED SPECIES

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

Experimental Populations Proposed for Two Fishes and a Squirrel

To assist in their recovery, the Service has proposed reintroducing two Endangered southwestern fishes, the Colorado squawfish and the woundfin, and the Endangered Delmarva fox squirrel back into parts of their historical habitats. The reintroduced animals would be designated as "nonessential experimental populations." This designation is intended to gain wider acceptance of the reintroduction effort by increasing management flexibility for the newly established populations and their habitat.

Reintroducing listed species into selected parts of their former range is often an important element in the recovery of these organisms. Unfortunately, the strict protection given Endangered animals and plants can make reintroductions of these species controversial, and result in opposition to establishment of new populations. In order to gain wider public acceptance, Congress added Section 10(j) to the Endangered Species Act in 1982 to authorize a new classification, "experimental popula-

tion," that would allow for more management flexibility by treating reintroduced populations of Endangered species in most ways as if they were Threatened. This less restrictive classification gives the Service more discretion in writing special rules allowing exceptions to certain activities that might otherwise be prohibited, particularly regulated taking. In addition, Federal activities in the reintroduction sites of nonessential populations are only subject to the provisions of Section 7(a)(4) of the Act, in which the parties confer (a non-binding procedure).

Two Southwestern Fishes

Colorado squawfish (*Ptychocheilus lucius*) were once widespread in the Southwest, occupying the entire Colorado River system, including the Gila River and its tributaries in Arizona. They were a highly valued food resource and were numerous enough to support a commercial fishery. As the region was

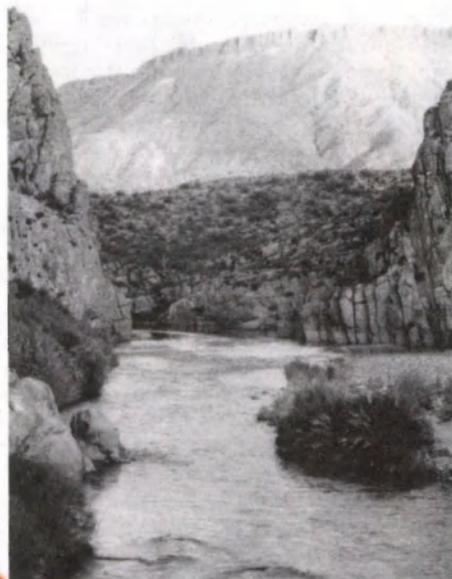
developed, however, most of the warm-water, free-flowing habitat of the Colorado squawfish was inundated by reservoirs or drawn down by diversion for agriculture and other purposes. In the remaining habitat, competition with exotic fishes was another major problem. Today, the squawfish has disappeared from the lower Colorado River basin, and remnant viable populations of this species can be found only in a few parts of the upper basin. The last squawfish known from Arizona waters was collected in the early 1950s, and intensive sampling since then has failed to locate any specimens anywhere in the State.

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Colorado squawfish

Photo by J. E. Johnson



Under the experimental population rule, Colorado squawfish would be reintroduced into this section of the Salt River, Arizona.

Four Western Plants Threatened by Habitat Degradation

Four species of plants that are found only in small numbers in the western U.S. have been proposed for listing as Threatened. All four are jeopardized primarily by habitat modification and degradation. If the proposals are approved, the conservation measures authorized under the Endangered Species Act will be available for these species:

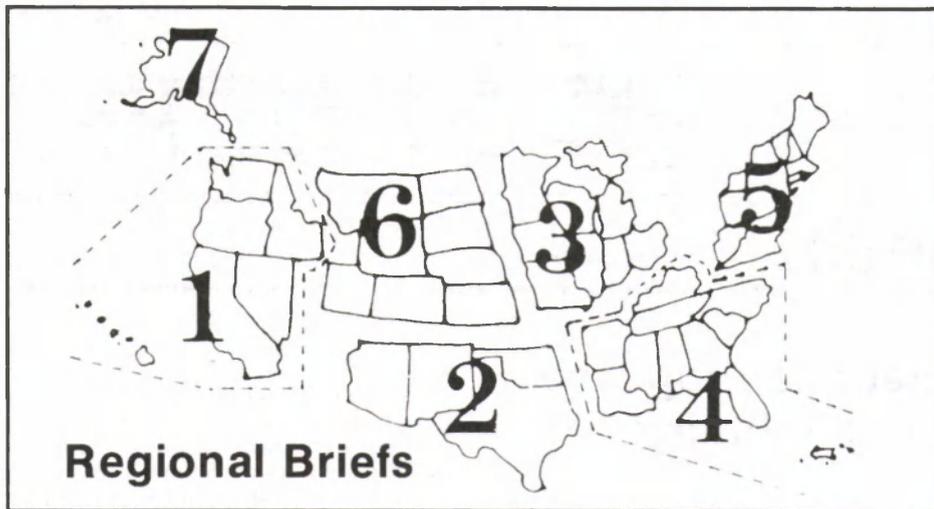
Primula maguirei

The Maguire primrose, *Primula maguirei*, is a perennial herb with showy, lavender-colored flowers. It measures approximately 4-10 cm tall,

and the stems can bear from one to three flowers. This species is found only within Logan Canyon in Cache County, Utah, where it grows on damp ledges, in crevices, and over rocks along the canyon walls. Of the 9 currently known populations, none contain more than 100 plants, and some number fewer than 30. Due to its low numbers and localized distribution, *P. maguirei* is particularly vulnerable to habitat disturbance.

All nine populations of *P. maguirei* are on land managed by the U.S. Forest Service (USFS) and the State of Utah. A highway construction project through

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Regional Briefs

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

Region 1—Field surveys for the Endangered Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*) have yet to reveal any adult butterflies this year. In recent years, development

of recreational facilities and subdivisions have destroyed many colonies of this highly restricted butterfly.

An Action Plan for recovery of the Modoc sucker (*Catostomus microps*) has been approved by the Fish and Wild-

life Service, U.S. Forest Service, and California Department of Fish and Game. The plan sets forth a recovery program for this fish, whose numbers have been reduced to approximately 1,000 individuals in four streams. The Service recently proposed Endangered status for this species (see BULLETIN Vol. IX No. 2).

Work on protection efforts for Coachella Valley fringe-toed lizard (*Uma inornata*) habitat continues. The first draft of the Habitat Conservation Plan was completed in April. The Nature Conservancy has options to buy a significant portion of the area being proposed for the lizard preserve. Local government agencies are joining in the process and are preparing the necessary ordinances to implement the plan. The Bureau of Land Management (BLM) and The Nature Conservancy are working on a land swap that will put more of the proposed conserved habitat into public ownership. Negotiations are underway with BLM and the Coachella Valley Water District to set aside two smaller preserves for the lizard.

A two-count Notice of Violation was issued to a landowner who had graded Coachella Valley fringe-toed lizard habitat. The issue has yet to be settled. Other violations within the habitat area have occurred and are under investigation by the Service's Law Enforcement Office.

The Service's Reno, Nevada, endangered species staff recently conducted a field trip to the Ash Meadows area to collect specimens from what is believed to be a new locality of the Amargosa niterwort (*Nitrophila mohavensis*), a plant proposed as Endangered. The site lies on BLM land within Nevada, and is approximately 4 miles from its original and only confirmed site (in nearby California). Dr. Stanley Welsh of Brigham Young University will verify the specimens. Even with a second locality, the Amargosa niterwort would still have the most restricted distribution of any plant species endemic to Ash Meadows.

The Bureau of Reclamation and other concerned parties are continuing their efforts to draft plans to settle water-use conflicts on the Truckee and Carson Rivers. A review of the preliminary draft indicated that suggested actions were inadequate for the recovery and conservation of cui-ui (*Chasmistes cujus*) and Lahontan cutthroat trout (*Salmo clarki henshawi*) in Pyramid Lake, and that the value of Carson Lake Community Pasture to migratory birds was not addressed.

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Guam Rail Given Emergency Protection

A small, flightless bird, the Guam rail (*Rallus owstoni*), was listed as an Endangered species under an April 11, 1984, emergency rule (F.R. 4/11/84), which will be in effect for 240 days. This bird, found only on the island of Guam in the Mariana Islands, has declined drastically over the past few years in numbers and distribution. An emergency situation developed when the U.S. Air Force (USAF) was about to begin clearing an area adjacent to Andersen Air Force Base to enhance base security. The habitat that would have been cleared is one of the few areas still occupied by the rail. After concern was raised about the rail habitat, the USAF suspended its land clearing plans while it works with the Service and Guam wildlife officials to find a way to conserve the rail and still improve base security.

The severity of the rail's decline is illustrated by the fact that, over just the past 15 years, its numbers have declined 99 percent. By 1983, fewer than 100 birds were thought to survive, and the population may now be down to fewer than 50. Although habitat loss has been a factor in the decline, it cannot account fully for the precipitous drop in the past few years. Predation by an introduced snake (the brown tree snake, *Boiga irregularis*), and other predators, including lizards, rats, dogs, and cats may also be playing a part in the decline. Another suspected cause for the sharp plunge in numbers is the possible spread of a yet undetermined avian disease. An introduced tropical mosquito, *Culex quinquefasciatus*, now is common on Guam and could be acting as a vector for avian malaria and other diseases. Investigations into the disease threat are currently being conducted. Additional research is planned for this summer. This work is being supported by a combination of both Federal and Guam Aquatic and Wildlife Resources Division funding.

Effective immediately upon publication of the emergency rule in the April 11, 1984, *Federal Register*, the Guam rail and its habitat received protection under the Endangered Species Act. In accordance with Section 7 of the Act, all Federal agencies, including the USAF, are required to ensure that any actions they fund, authorize, or carry out are not likely to jeopardize the survival of the Guam rail or degrade its habitat. If any Federal agency plans any action that may affect the rail's habitat, it will have to consult with the Service to develop reasonable and prudent alternatives that

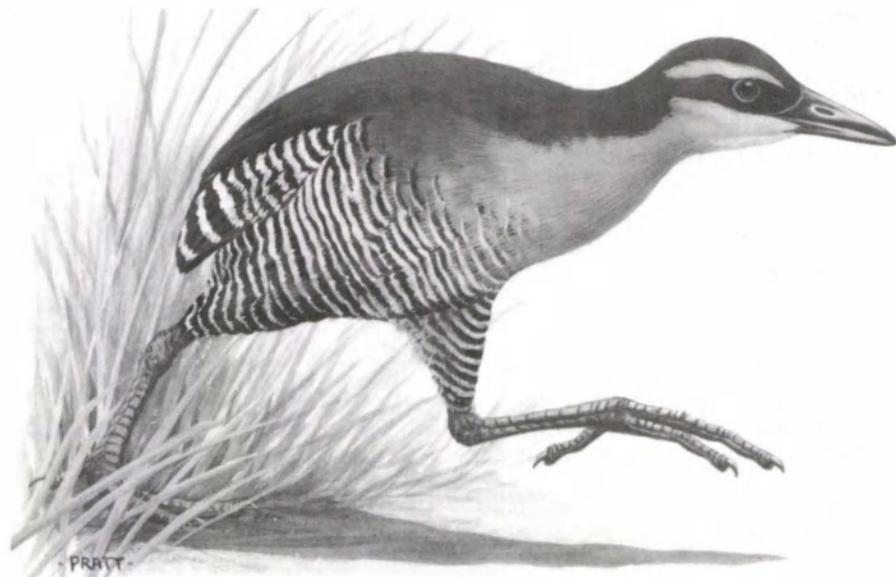


Illustration by H. Douglas Pratt

Although it was once considered common, the Guam rail has declined in numbers to fewer than 50 birds.

could allow the action to proceed without harm to the species. Secretary of Defense Weinberger has given assurances to Secretary of the Interior Clark that no actions will be taken that would harm the rails.

The emergency listing will give the Guam rail all of the protection authorized by the Endangered Species Act during the 240-day life of the temporary rule. A proposal to give permanent protection under the Act to the rail and eight other vulnerable Guam animals was published in the November 29, 1983, *Federal Register* (see BULLETIN Vol. VIII No. 12), but that proposal is still under review.

Regional Briefs

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A release schedule for water from Stampede Reservoir was recently set in a continuing effort to recover the cui-ui and to restore Lahontan cutthroat trout to Pyramid Lake. The schedule is based on a recommendation of a 320,000 acre-foot forecast this year for the Truckee River from mid-March through July, the full storage forecast for Stampede Reservoir, and the fact that last year high flows at Marble Bluff Dam were received. These forecasts, along with Stampede releases, are good indications of a sizeable and successful cui-ui spawning run this year.

The Reno staff has recently found two new reproductive populations of the Endangered Moapa dace (*Moapa coriacea*) in the Upper Muddy River, Nevada. Prior to this find, the only known reproducing population in the Upper Muddy

River was in a 500-foot section of a tributary. Another reproducing population is located on the Moapa National Wildlife Refuge (NWR). The unfortunate thing about one of the newly found populations is that it reproduces in an irrigation ditch and most of its progeny are lost to irrigated fields. Once habitat that was recently added to the Moapa NWR is rehabilitated, young dace from the irrigation ditch will be transferred there.

Volunteer programs are well underway in the Hawaiian Islands at James Campbell NWR (O'ahu) and at Kilauea Point (Kaua'i). Volunteers on O'ahu from the Hawaii Audubon Society recently aided the Campbell NWR staff by clearing vegetation on nesting islands to provide additional habitat for the Hawaiian stilt (*Himantopus himantopus knudseni*).

Region 2—Final recovery plans were signed for the Mesa Verde cactus (*Sclerocactus mesae-verdae*), gypsum wild buckwheat (*Eriogonum gypsophilum*), and Peebles Navajo cactus (*Pediocactus peeblesianus* var. *peeblesianus*). Copies of the plans are available from the regional office.

March 26 began the seventh season of protection and conservation for Kemp's Ridley sea turtles (*Lepidochelys kempii*) at Playa de Rancho Nuevo, Tamaulipas, Mexico. This project is jointly administered by the Instituto Nacional de la Pesca and the Fish and Wildlife Service. As of April 26, 50 nests had been protected.

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Four Fishes Proposed for Listing as Threatened

A species of perch native to several Missouri streams, along with three desert fishes found in isolated Nevada and Oregon springs, were proposed during April for listing as Threatened species. Habitat destruction and the effects of introduced fishes have been the primary reasons for their decline. If the proposed rules are made final, the jeopardized fishes could benefit from the conservation measures authorized under the Endangered Species Act.

Niangua Darter

Native to the Osage River Basin in west-central Missouri, the Niangua darter (*Etheostoma nianguae*) inhabits clear, medium-sized streams draining hilly areas. Within this habitat, it generally prefers the margins of shallow pools with silt-free gravelly or rocky bottoms; spawning, however, occurs on swift, gravel riffles. In 1978, the Niangua darter was known from only eight small localities along 128 miles of streams and creeks in the Osage Basin (see F.R. 4/17/84 for details). The species apparently has declined at most of these sites in recent years, primarily because of modification and destruction of its natural, free-flowing habitat.

An impoundment (Truman Reservoir) extirpated one of the eight populations by inundating its free-flowing stream. The dam also presents a barrier to the movement of Niangua darters among various tributary streams, which could further jeopardize isolated populations. Stream channelization, often associated with flood control projects or highway and bridge construction, frequently damages water quality through erosion and siltation. The removal of woody vegetation along the banks of stream channels causes further erosion, changes the character of the stream substrate, eliminates pools, and generally disrupts the aquatic ecosystem. These practices are pervasive throughout the range of the Niangua darter. In addition, two potential predators of the darter, the spotted bass (*Micropterus punctulatus*) and rock bass (*Ambloplites rupestris*), were introduced into the Osage Basin before 1940 and have become established in the reservoirs. If these predacious exotics move out into tributary streams, they could further threaten the darter's survival.

The Endangered Species Committee of the American Fisheries Society expressed its opinion in 1979 that the Niangua darter is threatened. In 1980,

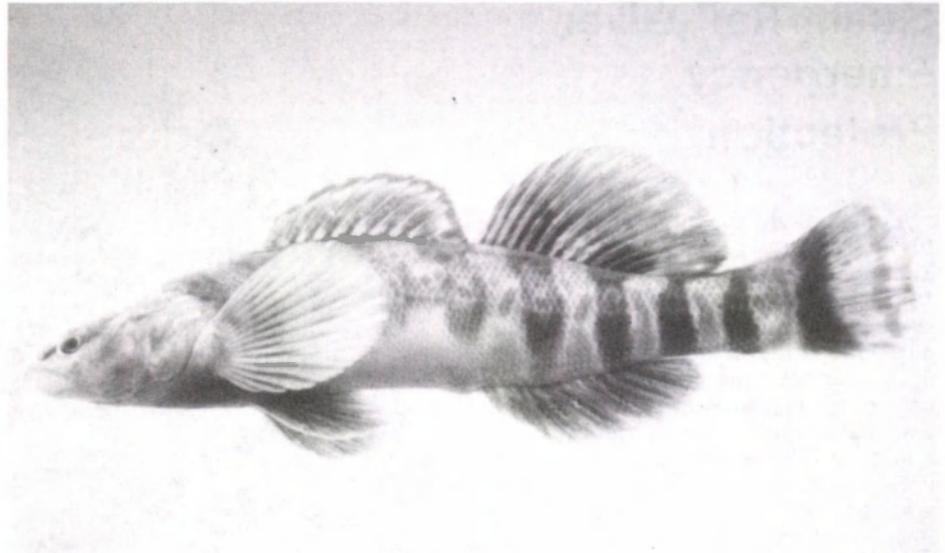


Photo by W. L. Pflieger

The Niangua darter is a slender, distinctively marked fish reaching 3 to 4 inches in length.

the Service was formally petitioned by the Ozark Endangered Species Task Force to list the fish as Threatened under the Endangered Species Act. The petition was based on a comprehensive report on the Niangua darter written by Dr. William L. Pflieger of the Missouri Department of Conservation after his research on the species during 1974-1977. Subsequently, the petition was accepted by the Service as presenting substantial evidence that the petitioned action is warranted, and the Niangua darter also was included in the December 30, 1982, Notice of Review of Vertebrate Wildlife as a Category 1 listing candidate. Under the procedures of the Act, a formal listing proposal was then prepared.

A designation of Critical Habitat was included in the April 17, 1984, listing proposal. The proposed Critical Habitat is based primarily upon the recommendation of the Missouri Department of Conservation, and it includes 90 of the 128 miles of streams inhabited by the Niangua darter plus a 50-foot riparian zone along each side. Conserving vegetation in the riparian zone will reduce siltation and other water pollution, and will help to stabilize water temperatures and dissolved oxygen levels. Potential economic effects from the proposed Critical Habitat designation will be considered prior to the decision on a final rule. Currently, there are no known Federal activities that may have an impact on the habitat.

Comments on the proposal to list the Niangua darter as Threatened are sought from all interested agencies, organizations, and individuals, and are due to the Region 3 Endangered Species Office, U.S. Fish and Wildlife Service, Federal Building, Fort Snelling, Twin Cities, MN 55111 by June 18, 1984.

Railroad Valley Springfish

The Railroad Valley springfish (*Crenichthys nevadae*) is native to six thermal springs in the arid Railroad Valley of northwestern Nye County, Nevada. Four of the springs (Hay Corral, Reynolds, North, and Big) are located near Lockes Ranch and the other two (Big Warm and Little Warm) are within the Duckwater Shoshone Indian Reservation. Additionally, the species has been introduced into Chimney Springs, approximately 6 miles south of Lockes Ranch, and into a seepage area that forms small thermal ponds at Sodaville in Mineral County, Nevada. In these places, the fish inhabits spring pools, their outflows, and some adjacent marshy areas.

The Railroad Valley springfish is another rare species jeopardized by habitat destruction and the introduction of exotic organisms. Most of the thermal springs historically inhabited by the Railroad Valley springfish have been severely altered by agricultural activities, and springfish populations have decreased in all habitats. Diking of spring pools, diversion of outflows, and channelization of outflow creeks have reduced the amount of suitable springfish habitat at Big, Hay Corral, and Big Warm Springs. North Spring has been damaged by siltation from adjacent overgrazed range land. Large numbers of cattle drinking at the spring trample the spring banks, further degrading water quality by increasing erosion and turbidity. Excessive pumping of the aquifers that feed the springs could eliminate habitat outright by lowering the water table and causing spring failures. This danger was illustrated in 1981 when the habitat of the introduced population at Chimney Springs was lost after the spring flow ceased. Several

other springs south of Lockes Ranch also failed during 1981.

Another serious threat to the Railroad Valley springfish is the presence of exotic fishes. Guppies (*Poecilia reticulata*) have become established in Big Warm Spring. The effect of this introduced species on the springfish is uncertain; however, the establishment of guppies in other habitats occupied by native fishes has resulted in either dramatic population declines or elimination of native species. Development of a catfish farm in 1982 at Big Warm Spring further altered the physical habitat, but the introduction of the channel catfish (*Ictalurus punctatus*) is an even greater danger to the springfish. Operation of the catfish farm at Big Warm Spring has permitted the predacious catfish to the entire spring system. The springfish population has almost disappeared since catfish were introduced into the spring. There also is the possibility that other exotics could become established in other springs.

The Railroad Valley springfish, like the Niangua darter, was included in the 1982 Notice of Review of Vertebrate Wildlife as a Category 1 candidate for listing. In April 1983, the Service was petitioned by the Desert Fishes Council to list the Railroad Valley springfish, and an acceptance of the petition was published 3 months later (F.R. 6/14/83). The Service's listing proposal was published in the April 17, 1984, *Federal Register*.

Part of the listing proposal was a designation of Critical Habitat for the springfish. The six springs where this species historically occurred are included in the Critical Habitat proposal, along with their outflow pools, streams,

marshes, and a 50-foot riparian zone around these areas. Conserving this riparian area is necessary to help maintain the proper water quality, temperature, pH, and other characteristics of the aquatic environment. Marginal springfish habitat in Big Warm Spring's outflow downstream from the proposed Critical Habitat was not included, nor was the habitat occupied by the introduced populations since it is outside the species' historical range.

Federal agencies that might be involved in future actions affecting the Critical Habitat are the Bureau of Land Management (BLM) and Bureau of Indian Affairs (BIA). The only known BLM activity in the area is leasing of public lands near North Spring for cattle grazing. Currently, cattle graze extensively in a marshy area along the spring outflow with adverse effects on the aquatic habitat. BIA activities include use of the Big Warm Spring outflow by the Duckwater Shoshone Tribe for irrigation and catfish farming, both of which have degraded the habitat. Potential economic impacts from a Critical Habitat designation will be considered prior to publication of a final rule.

Two Oregon Fishes

Two fish subspecies, each known only from a highly restricted area in generally arid south-central Oregon, also were proposed in April for listing as Threatened (F.R. 4/17/84). The Hutton tui chub (*Gila bicolor* ssp.) is restricted to Hutton Spring and a small nearby seep, both along the margin of now dry Alkali Lake. Its numbers are estimated at no more than 450. The Foskett speckled dace

(*Rhinichthys osculus* ssp.) is native only to Foskett Spring in the Coleman Basin, where it numbers about 1,500, and it may be found in one small pool to the south where a transplant was attempted in 1982. Scientific descriptions of both subspecies are being prepared under the direction of Dr. Carl Bond of Oregon State University. Because these fishes occur in such low numbers and have extremely limited distribution, they are particularly vulnerable to habitat degradation.

Both spring systems are in Lake County, Oregon, on private lands that are used for cattle grazing and other purposes. A portion of Hutton Spring already has been altered by mechanical means. Channelling this springflow (which is very low, only 1.0 cubic foot per second) or excessive ground water pumping could destroy the entire spring ecosystem. Trampling by livestock at Hutton Spring also has been a problem. At Foskett Spring, the flow rate is even lower, less than 0.5 cfs. Its endemic dace is vulnerable to the same types of habitat disturbance as the tui chub. It has yet to be determined if the Foskett speckled dace has become established where it was introduced into a nearby pool.

A greater threat is ground water contamination. Hutton Spring is less than 2 miles north of a large chemical disposal site. Toxic wastes from this dump already have polluted adjacent ground water, surface water, and even the air in the Alkali Lake area. It is possible that the waters of Hutton Spring itself will become contaminated within the foreseeable future if steps are not taken to control the problem.

Fish and Wildlife Service concern about the status of the two Oregon fishes was first expressed in the 1982 Notice of Review on Vertebrate Wildlife, which designated both subspecies as Category 1 candidates for listing. In April 1983, the Service was petitioned by the Desert Fishes Council to proceed with a listing proposal, and the petition was accepted as valid. The April 17, 1984, listing proposal, if made final, would give the tui chub and speckled dace protection under the Endangered Species Act; however, it did not include a designation of Critical Habitat because the Service believes it would not be in the interest of their conservation. The location of the two springs is not well known, and publishing detailed habitat maps—which is required under a Critical Habitat designation—would make them more vulnerable to vandalism. Nevertheless, the habitat of the Hutton tui chub and the Foskett speckled dace will receive the full protection authorized under Section 7 of the Act.

Comments on the proposals to list the

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Photo by D. W.

Restricted to a few small thermal springs and outflows in central Nevada, the Railroad Valley springfish is vulnerable to habitat alteration, overpumping of ground water, and introductions of exotic species.

Experimental Populations Proposed

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A limited amount of large, free-flowing riverine habitat still exists in Arizona. The Colorado Squawfish Recovery Plan calls for reintroducing the species into selected lower basin streams within its historical range. Fish for the restocking will not come from the remaining wild populations in the upper basin, but from an existing captive-bred population at the Service's Dexter National Fish Hatchery (NFH) in New Mexico. Last year, the Dexter facility produced over 200,000 young squawfish.

Woundfin (*Plagopterus argentissimus*) formerly were distributed in the mainstream Colorado, Gila, Salt, and Virgin Rivers, but the kind of habitat damage described above also eliminated this silvery minnow from most of its historic range. Only the Virgin River maintains a woundfin population. The Service has proposed to remove 5,000 fish from this population to use for restocking in several central Arizona streams that still contain some good habitat. Removing these fish is not considered likely to jeopardize the continued existence of the wild population, which during pre-spawning times may number 250,000 fish, but none will be taken until it has been determined that their removal will not impact the species. Woundfin from Dexter NFH will also be used in the reintroduction effort. If the experimental populations are successful, and the chances are considered good, they will make a significant contribution to the recovery of the species.

The proposed reintroduction plans (F.R. 4/10/84) for both the woundfin and



Photo by J. E. Johnson

This stretch of the Gila River in Arizona is one of the proposed reintroduction sites for the woundfin.

the Colorado squawfish were developed in cooperation with the Arizona Game and Fish Department, and will be carried out as a joint project. Current plans call for annual stocking over the next 10 years within the species' historical range. Squawfish would be reintroduced into isolated segments of the Salt and Verde Rivers. The first stocking could take place as early as autumn 1984, and will consist of at least 100,000 3-inch hatchery-reared squawfish divided between the two sites. Woundfin will be restocked into parts of the Verde, Gila, Hassayampa, and San Francisco Rivers, and a section of Tonto Creek. The 5,000 woundfin taken from the existing wild population prior to spawning in spring 1985 will be distributed among the five areas. Current plans call for developing facilities at Dexter NFH

so that hatchery-reared woundfin can be produced in larger numbers for future reintroduction stock.

Reintroduced populations of woundfin and Colorado squawfish would be checked annually to determine their condition. Movement of these fishes from the restocking sites would be limited due to the small amount of suitable habitat upstream and downstream from the reintroduction sites. Dams and dry reaches of the Gila River will prevent any mixing of the wild and stocked populations, a requirement of the experimental population designation.

Delmarva Fox Squirrel

The Delmarva fox squirrel (*Sciurus niger cinereus*) is considerably larger than the gray squirrel, which shares its range, and has more specific habitat requirements. Historically, this subspecies of fox squirrel occurred in scattered areas throughout southeastern Pennsylvania, south-central New Jersey, eastern Maryland, the Virginia portion of the Delmarva Peninsula, and Delaware. It was confined to savannah or park-like areas, forests bordering rivers and streams, and small open woodlots with little or no understory. As this habitat was logged, then converted to agriculture or replaced by dense regrowth, the Delmarva fox squirrel disappeared from most sections of its former range, and was listed as Endangered. Currently, it is found only in part of eastern Maryland and at Chincoteague National Wildlife Refuge in Virginia (where it was reintroduced in the 1970s).

A proposal has been made to establish a non-essential experimental population of the Delmarva fox squirrel in the



Photo by John N. Rinne

Woundfin

Assawoman Wildlife Area in Sussex County, Delaware, in the extreme south-eastern corner of the State (F.R. 4/5/84). From 6 to 18 squirrels would be taken from healthy, expanding populations in Maryland and transferred to the reintroduction site, which is within the species' historical range and still contains suitable habitat. This experimental population will be geographically isolated from the nearest current population, which is about 50 miles away. The reintroduction project will be a cooperative effort among the Delaware Department of Natural Resources and Environmental Control, the Maryland Department of Natural Resources, and the U.S. Fish and Wildlife Service.

As nonessential experimental populations, the reintroduced fishes and squirrels would be treated as Threatened species under most provisions of the Act; however, they would be treated as species that are *proposed* for listing under Section 7(a)(4) for habitat conservation purposes. Instead of being required to "consult" with the Service on federally involved actions that may affect these species or their habitats, Federal agencies would only have to informally "confer."

All protective prohibitions in 50 CFR 17.31 would apply. However, both experimental population proposals include a special rule allowing the incidental take of reintroduced animals under certain circumstances by licensed hunters and anglers operating in accordance with applicable State

laws and regulations.

It should be emphasized that, until their recovery, the existing natural populations of all three species will retain their Endangered classification and will continue to receive all of the protection authorized for endangered species.

Petition Finding on Flattened Musk Turtle

On December 1, 1983, the Service received a petition, submitted on behalf of the Environmental Defense Fund, to list the flattened musk turtle (*Sternotherus minor depressus*) as a Threatened species. After reviewing the petition, the Service has issued a finding that it contains substantial biological information to indicate that a listing may be warranted (F.R. 4/5/84). Additional data on the turtle's taxonomy, distribution, and vulnerability, along with any Critical Habitat recommendations, are requested. The Service must decide by December 1, 1984, if a listing is warranted and should be proposed.

The flattened musk turtle is a small freshwater subspecies occurring in central Alabama. It has a distinctly flattened carapace, and the largest recorded specimen was 119 mm in carapace length. Threats to its survival appear to include: 1) siltation of habitat from certain mining, logging, and agricultural practices; 2) chemical contamination

and other forms of water pollution; and 3) over-collection, particularly for the pet trade.

Four Fishes Proposed for Listing as Threatened

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Railroad Valley springfish, Hutton tui chub, and Foskett speckled dace are due to the Regional Director, U.S. Fish and Wildlife Service, Suite 1692, Lloyd 500 Building, 500 N.E. Multnomah Street, Portland, Oregon 97232 by June 18, 1984.

If the listing proposals are made final, all four fishes will receive protection under the Endangered Species Act as Threatened species. Among the conservation measures authorized under the Act are status recognition, recovery actions, Federal aid to State cooperative programs, prohibitions against certain practices, and protection of habitat from any adverse impacts of Federal activities.

Generally, it is illegal to take, possess, transport, or engage in interstate or international trafficking in Threatened species without a permit; however, Section 4(d) of the Act authorizes the development of special regulations on the taking of Threatened species when consistent with State laws and for educational, scientific, propagation, and other conservation purposes. All four of the fishes newly proposed for listing as Threatened receive some protection through State regulations that restrict taking without a State permit. Because of the existing State controls, and because habitat degradation is the primary danger to the survival of the fishes, the listing proposals contain special rules allowing take of these species without a Federal permit if a State permit has been obtained and all other State wildlife conservation requirements are satisfied. The Service believes that this special rule will allow for more efficient management of the species, thereby aiding their conservation.

Under Section 7 of the Act, all Federal agencies are required to ensure that any actions they fund, authorize, or carry out are not likely to jeopardize the survival of listed species or adversely modify their Critical Habitat. This protection will also apply to the two Oregon fishes even though a formal designation of Critical Habitat was not included in the listing proposal.



Photo by William H. Julian

The Delmarva fox squirrel can be distinguished from the common gray squirrel by such features as its larger size, fuller tail, and uniformly colored pelage.

Four Western Plants

continued from page 1

the Right Fork of Logan Canyon, planned by the Utah Department of Transportation, would have a direct impact on one *P. maguirei* population center, and two other populations also would probably be disturbed. Any construction through that part of the canyon habitat without considering the plant's conservation could threaten its survival. Development of campgrounds in the Logan Canyon area also might pose a threat to the species.

The proposal to list *P. maguirei* as a Threatened species (F.R. 4/13/84) did not contain a designation of Critical Habitat because publishing the required maps would make this attractive primrose vulnerable to collection for hobbyists and the plant trade. Nevertheless, it will receive the full habitat protection authorized under Section 7 of the Endangered Species Act. All of the Act's other conservation measures will apply as well.

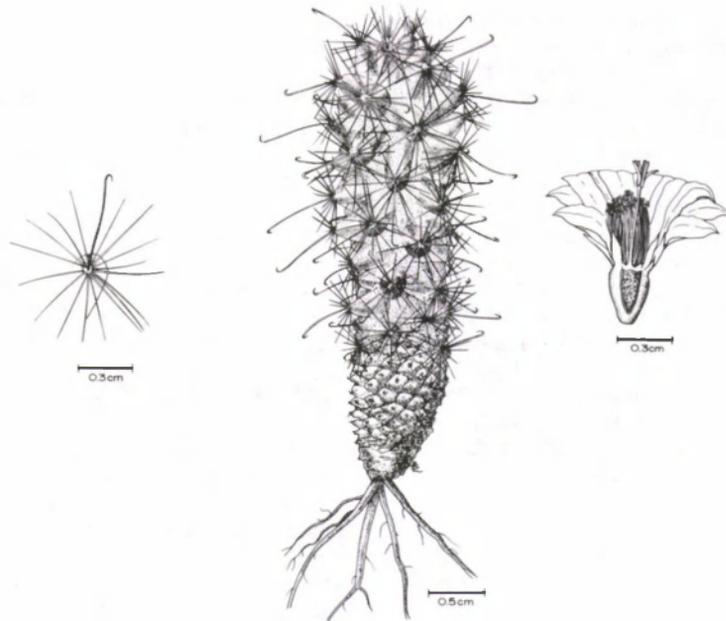
Comments on the proposal to list *Primula maguirei* as a Threatened species are invited from all interested agencies, organizations, and individuals, and are due to the Regional Director, Region 6, U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 by June 12, 1984.

Erigeron rhizomatus

The rhizome fleabane, *Erigeron rhizomatus*, is a perennial herb growing as clumps of stems 25-45 cm high and up to 30 cm across. Its narrow, dark green leaves reach about one cm in length, and the single blue or white flower heads are 13-16 mm wide. Most of the plants are clonal offspring that have arisen from rhizomes (horizontal underground stems). They grow on loose, decaying slopes of the Chinle shale formation.

Approximately 20 small populations of *E. rhizomatus* are known, totalling only about 200 individual plants. All are found in Cibola National Forest in McKinley and Catron Counties, New Mexico. Most of the populations in the Datil and Sawtooth Mountains occur within, or very close to, extensive but currently inactive uranium claims. If the claims are reactivated and developed without planning for the conservation of *E. rhizomatus*, these populations could be severely damaged or even destroyed. Road construction to support a mining operation, with the resulting erosion, also could have harmful effects on the plants.

All of the *E. rhizomatus* populations are on lands managed by the U.S. Forest



Mammillaria thornberi is a cylindrical fishhook cactus growing up to 25 cm high, with small lavender flowers and red fruit.

Service (USFS), and they will receive the full protection authorized under Section 7 of the Endangered Species Act if the listing is approved. The proposal to list *E. rhizomatus* as a Threatened species (F.R. 4/24/84) did not contain a designation of Critical Habitat. In this case, such a regulatory designation would not add to the species' protection since the USFS already is aware of where *E. rhizomatus* occurs and can take steps to ensure the species' conservation. Publishing Critical Habitat maps would make the population sites much more widely known, and could make the plants vulnerable to vandalism and illegal taking.

Mammillaria thornberi

Thornber's fishhook cactus, *Mammillaria thornberi*, is a small clustering species historically known from the Sonoran Desert in Pima and Pinal Counties, Arizona. (There are also unconfirmed reports from Sonora, Mexico.) Currently, two population centers are known. The largest and healthiest populations are found in the Avra Valley/Saguaro National Monument (West Unit) area on lands managed by the National Park Service (NPS), Bureau of Land Management (BLM), and private land owners. A second, smaller population center is located on the Papago Indian Reservation; however, plants in that area are only occasional to rare, smaller in size, and not as healthy.

M. thornberi was proposed for listing as a Threatened species (F.R. 4/24/84) because almost all known populations are threatened by habitat alteration or loss. Avra Valley is undergoing rapid development as the city of Tucson

expands westward. The valley is considered desirable for agricultural, residential, business, and utility projects. In addition, the increased pumping of ground water from the aquifer is lowering the water table, thereby increasing the harmful effects of development on the local flora. Those *M. thornberi* populations on BLM-administered lands in Avra Valley currently receive some protection; however, the State of Arizona has applied for transfer of 6,274 acres to State control, including sections with several cactus populations (one of which is extensive). Other BLM lands, which may contain the species, have been identified for possible sale to private owners. Once transferred to the State or private owners, these lands are expected to be developed.

Another threat to *M. thornberi* and its habitat is the proposed construction of a Central Arizona Project (CAP) aqueduct and, possibly, a reservoir in areas containing populations of the cactus. One of the prime routes under consideration for the aqueduct cuts directly through an area populated by *M. thornberi* for several kilometers, and all alternate routes could affect one or more populations. Cactus habitat on the Papago Indian Reservation will likely be reduced because the reservation's CAP water allocation will allow an additional 3,000 acres to be converted for agriculture. *M. thornberi* habitat on reservation land already is being degraded because of overgrazing and trampling by cattle.

A designation of Critical Habitat was not included in the listing proposal since *M. thornberi* has been of interest in the past to collectors of rare cacti. The problem of collecting from habitat would be

even greater to the species if the population sites become widely known. Publishing Critical Habitat maps would pinpoint these locations. Nevertheless, even without the formal Critical Habitat designation, *M. thornberi* and its habitat would receive the full protection authorized under Section 7 of the Endangered Species Act from the adverse impacts of Federal actions.

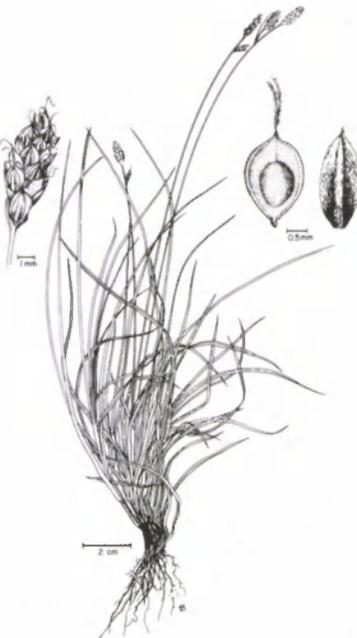
Carex specuicola

Another Arizona plant, *Carex specuicola*, occurs in Coconino County on the Navajo Indian Reservation. This perennial sedge grows in sandy to silty soils along shady spring and seep outflows near the Inscription House Ruin. Within this restricted range, *C. specuicola* is locally common, growing in dense clumps from rhizomes. Each of the three known populations covers an area of about 200 square meters.

Many species within the genus *Carex* are palatable to grazing wildlife and livestock, and two of the three *C. specuicola* populations occur in areas used for livestock watering. An increase in livestock use at these sites could be harmful to the species, not only from grazing but from the associated trampling and soil erosion. Fencing the plant's population sites might offer protection from grazing; however, before fencing is attempted, succession in the spring community will have to be studied to determine the effects of succession on *C. specuicola*. In addition, planning for water developments at the springs and seeps will need to take the *C. specuicola* habitat into account. Although Navajo Tribal law prohibits the study or collection of this plant without a Tribal permit, it does not offer protection against habitat modification, reduction of the water supply, or grazing impacts.

Because of the threats to *C. specuicola* and its restricted habitat, this plant has been proposed for listing as a Threatened species (F.R. 4/11/84). Included in the listing proposal is a designation of Critical Habitat, which comprises about 600 square meters and contains all habitat currently known to be occupied by the plant. If the listing is approved, Federal agencies such as the Bureau of Indian Affairs (BIA) will be required to consult with the Fish and Wildlife Service on any federally involved activities that may affect *C. specuicola*. The BIA issues grazing permits on the Navajo Reservation, and could be involved in funding and/or authorizing spring development projects.

Comments on the proposals to list *Mammillaria thornberi* (due June 12), *Eriogonon rhizomatus* (due June 25), and *Carex specuicola* (due June 11) should be addressed to the Regional Director, Region 2, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, NM 87103.



Carex specuicola has triangular stems 25-40 cm high and thin, pale green leaves 12-20 cm long.

All four of the newly proposed plants were included in a January 1975 report on vulnerable plants compiled by the Smithsonian Institution. On July 1, 1975, the Service published a notice in the *Federal Register* that it accepted the report as a listing petition and would begin a status review. These four plants, along with many others, subsequently were identified by the Service in a December 12, 1980, *Federal Register* notice as Category 1 candidates for future listing as Threatened or Endangered species.

If the listing proposals are made final, the four plants will be classified as Threatened species, and will receive the full protection authorized under the Endangered Species Act. Among the available conservation measures are status recognition, the development of recovery plans, possible Federal aid to cooperative State conservation programs, and prohibitions against certain actions affecting the plants and their habitat. Under Section 7 of the Act, Federal agencies would be required to ensure that any actions they fund, authorize, or carry out are not likely to jeopardize the survival of these species by directly affecting the plants or adversely modifying their habitat. Section 7 applies whether or not a formal designation of Critical Habitat has been published.

All trade prohibitions authorized in Section 9(a)(2) of the Act, as implemented by 50 CFR 17.71, also would apply. These prohibitions, in part, make it illegal to import or export listed plants

or to engage in interstate or international trade in these species. Seeds from cultivated specimens of Threatened plants are exempt from these prohibitions if a statement of "cultivated origin" appears on their containers. Permits for otherwise prohibited activities are available for certain scientific or conservation purposes.

Section 9(a)(2)(B) of the Act, as amended in 1982, makes it unlawful to take (remove and reduce to possession) Endangered plants from areas under Federal jurisdiction. Section 4(d) provides for regulations to extend this protection to plants classified as Threatened. Proposed regulations for the take of Threatened plants were published in the July 8, 1983, *Federal Register*.

Kangaroos Retain Threatened Classification

The Service has withdrawn its April 8, 1983, proposal to remove three kangaroos—the red (*Macropus rufus*), eastern gray (*M. giganteus*), and western gray (*M. fuliginosus*)—from the list of Threatened species (4/24/84). This decision is based on new data from the Australian Government that indicated kangaroo numbers have declined due to the effects of a severe drought.

During the Australian summer (December/January) of 1982-1983, that country experienced the worst and most widespread recorded drought in its history. Evidence gathered during surveys conducted in the winter (July/August) of 1983, after the delisting proposal was published, indicated significant declines in populations of the three Threatened kangaroos over most of their range. Given that the newest estimates of kangaroo numbers show declines from those upon which the Service based its delisting proposal and that there is a lack of firm data showing that populations are recovering, the Service believes that it is in the best interest of conservation to withdraw the proposal as a precaution. Fortunately, the drought broke during the fall and winter of 1983. If future data show that kangaroos are recovering significantly from the 1982-1983 drought, the Service may again publish a proposal to remove the three kangaroos from classification as Threatened species.

Because kangaroos still number in the millions and need to be controlled in some areas, and because the Australian States have demonstrated efficient conservation programs, the delisting withdrawal does not affect the special rule authorizing the importation of kangaroo products into the U.S.

Harbor Porpoise Proposed for Endangered Listing

The National Marine Fisheries Service (NMFS), which has management authority over most marine mammals, has proposed listing the *cochito*, or Gulf of California harbor porpoise (*Phocoena sinus*), as an Endangered species (F.R. 4/25/84). It is believed that only one small population remains, and that it has been seriously affected for over 40 years as an accidentally taken species during commercial gillnet fishing within its restricted range. Estimates have been made of an annual incidental catch of tens to hundreds of the porpoise.

More information on the proposed rule is available in the April 25, 1984, *Federal Register*. Comments on the proposal are due to Mr. Richard B. Roe, Office of Protected Species and Habitat Conservation, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Washington, D.C. 20235 by June 25, 1984.

Turtle Transshipment Regulations Withdrawn

The Fish and Wildlife Service and the National Marine Fisheries Service, which jointly published a May 4, 1983, proposal to change the Special Rules for Sea Turtles (50 CFR 17.42 and 227.72), have withdrawn the proposal (F.R. 4/26/84). Under the proposed change, transshipments of certain green sea turtle (*Chelonia mydas*) products from Cayman Turtle Farm, in the Cayman Islands, through the port of Miami, Florida, would have been allowed. However, transshipment through Miami is no longer useful to the farm because trade in green sea turtle products with western European nations was restricted by the European Economic Community on January 1, 1984. In recognition of this fact, the government of the Cayman Islands requested the withdrawal. Current prohibitions on transshipment and U.S. trade in this Threatened species remain in effect.

Regional Briefs

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Three whooping cranes (*Grus americana*) of the Grays Lake/Bosque del Apache experimental flock were injured during their migration north this spring.

The first was found on March 29 by a fence near Alamosa, Colorado. The radio the bird was carrying was found on another fence a few hundred yards away. This same bird, a young-of-the-year, hit a transmission line near Alamosa last autumn. The second bird, also of the 1983 year class, was found beneath a transmission line on April 8, near Alamosa NWR. Both of these birds were found dead. The third bird was found near Grand Junction, Colorado, on April 19 by personnel from the Colorado Division of Wildlife. It was found with a broken wing. Also from last year's highly successful hatch at Grays Lake, this crane had its wing amputated and then was flown to Patuxent Wildlife Research Center in Laurel, Maryland, where it will join the captive whooping crane breeding flock. These casualties bring the Grays Lake/Bosque del Apache flock down to approximately 27 birds; the total population in the wild stands at about 100.

Three new bald eagle (*Haliaeetus leucocephalus*) nest sites were discovered in Arizona this spring, including nests near the proposed New Waddell and Cliff Dam sites on the Agua Fria and Verde Rivers. One of the nests contains two half-grown chicks. Another nest contained eggs, but they failed to hatch. At last report, eagles at the third site on the Salt River were still incubating.

Region 4—Recovery efforts are now underway for the green pitcher plant (*Sarracenia oreophila*), which was listed as Endangered in 1980. Since the listing of the green pitcher plant, Service biologists have verified the plant's occurrence in 26 colonies, 25 of which are in northeast Alabama. The other colony is in northwest Georgia. All known colonies are extremely small, the largest being less than one acre. The Green Pitcher Plant Recovery Plan, approved in May 1983, calls for the protection and management of a minimum of 11 extant colonies, and reestablishment and management of 7 other colonies.

The Service, through its Endangered Species Field Station in Jackson, Mississippi, is now actively involved in the implementation of various parts of the recovery plan. To date, signed conservation agreements have been obtained with landowners for nine colonies of the plant. In addition, the Service and the Alabama Forestry Commission have entered into a cooperative agreement for the development and implementation of specific management plans for each colony site. It is hoped that the green pitcher plant is now on the road to recovery.

Staff members of the Jackson Endangered Species Field Station have recently completed the Ozark big-eared bat (*Plecotus townsendii ingens*) and Virginia big-eared bat (*P. t. virginianus*) recovery plans. These Endangered subspecies of Townsend's big-eared bat (*Plecotus townsendii*) are known from seven States. A 1983 maternity colony survey indicated a total population of approximately 310 reproductive female Ozark big-eared bats and approximately 3200 reproductive female Virginia big-eared bats. Highlights of the recovery efforts will be to locate colony sites, determine population trends, reduce human disturbance of maternity colonies and hibernacula, and determine and protect significant surface habitat.

A survey technique, developed by the Jackson office, now makes it possible to accurately monitor the effects of recovery efforts upon the populations of the bats. This technique allows biologists, with the aid of a night vision scope, to count big-eared bats without disturbing the colonies as they fly through a beam of infrared light.

The Jacksonville, Florida, Endangered Species Field Station is negotiating a conservation agreement with the Florida Army National Guard for the protection, management, and recovery of a population of Chapman's rhododendron (*Rhododendron chapmanii*) located at Camp Blanding, Clay County, Florida. The Endangered Chapman's rhododendron, a member of the heath family (Ericaceae), is known only from three disjunct populations in Florida. The Camp Blanding population consists of approximately 20 plants.

Chapman's rhododendron, which is adapted to periodic fire, grows on pine-lands suitable for commercial slash pine plantations. Threats to the species include commonly used site clearing and preparation techniques which destroy the shrubs; drainage projects; fire protection; collecting by ornamental breeders because of the plant's value as breeding stock for the development of new heat resistant varieties of ornamental rhododendrons; and the use of herbicides and fertilizers. The cooperative agreement allows the Fish and Wildlife Service to develop a management plan for the plant and provides for management actions to be taken on Camp Blanding. Routine monitoring is also established by the agreement and provisions are made to rescue the plants in an emergency.

The Tallahassee headquarters of the Florida Marine Patrol recently received a call on its toll-free "Resource Alert Hotline" reporting the sighting of a Florida manatee (*Trichechus manatus*) that

had been shot with an arrow. The animal was seen by a young boy in the St. Petersburg area and the report was made by his mother. The Tallahassee office notified the Gainesville Sirenia Lab and the Tampa District Office of the Florida Marine Patrol. An officer was dispatched to the scene to confirm the sighting, but the "arrow" turned out to be a length of plastic connecting a floating radio transmitter to a collar placed around the tail of the manatee. The transmitter was developed by Sirenia Lab personnel to enable them to radio track manatees in salt water. The floating transmitters were attached to thirteen manatees in the Kings Bay/Crystal River area during February and March of this year while the animals congregated there to take advantage of the warmer waters.

Region 5—A major step in the Virginia round-leaf birch (*Betula uber*) recovery program began on April 24, 1984. Approximately 500 2-year old seedlings were planted in five preselected areas at the Jefferson National Forest in southwest Virginia with the hope of establishing additional populations of this Endangered tree. Dr. Terry L. Sharik of Virginia Polytechnic Institute was assisted by Fish and Wildlife Service and U.S. Forest Service personnel in planting the trees.

Regional Director Howard Larsen met with Nova Scotia, Canada, officials to secure the transplant of six bald eagles to the State of Massachusetts in June.

Early survey work indicates that as many as 20 pairs of peregrine falcons (*Falco peregrinus*) are nesting or attempting to nest in Region 5 States this spring.

Roger Hogan of the Region 5 Endangered Species Office, and Judy Jacobs and Andy Moser from the Annapolis, Maryland, Field Office met with individuals from the National Speleological Society, Region 4 Service personnel, and staff members of the West Virginia Department of Natural Resources on April 25 and 26 in Franklin, West Virginia. The main topic of discussion was how to best protect Indiana bat (*Myotis sodalis*) and Virginia big-eared bat (*Plecotus townsendii virginianus*) caves from predators and unauthorized entry. Various gate and fencing designs were evaluated.

Region 6—On April 10, 1984, a meeting was held in Casper, Wyoming, to discuss the black-footed ferret (*Mustela nigripes*). Personnel from the Wyoming Game and Fish Department, Fish and Wildlife Service, Wildlife Preservation Trust, and Animal Research Conservation Center of the Bronx Zoo discussed the status of the ferret, future management plans, and the potential of establishing captive propagation facilities and transplanting black-footed ferrets.

Personnel from Regions 2 and 6 met on April 18, 1984, in Alamosa, Colorado, to discuss the procedures to be used in surveying for black-footed ferrets in both regions. They agreed to require

surveys for ferrets on projects that result in permanent changes to habitats, if the projects pass through isolated prairie dog towns of 250 acres or more, or through a complex of smaller towns that could combine to support a black-footed ferret population. In addition, the Service will not require surveys for black-footed ferrets on linear projects that only temporarily disturb prairie dog towns (pipelines, transmission lines, fences, etc.) of any size from July-February, as long as efforts are made to complete construction through the prairie dog town quickly. However, if a temporary-disturbance linear project passes through a prairie dog town of 250 acres or more, or through a complex of smaller towns between April-June, then ferret surveys will be required. As the result of the meeting, appropriate changes will be made in the FWS Black-Footed Ferret Survey Guidelines. For further information on these guidelines or the black-footed ferret, contact Max Schroeder, U.S. Fish and Wildlife Service, 1300 Blue Spruce, Fort Collins, Colorado 80523; telephone FTS 323-5277, commercial 303/493-4855.

A draft Colorado River Conservation Plan was completed and issued to State and Federal agencies for review in July 1983. This draft caused considerable controversy between the users of water developers/users and those of the Endangered Colorado squawfish (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and bonytail chub (*Gila elegans*). Major concerns related to the streamflows recommended by the Service

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CITES News

The Endangered Species Act of 1973, as amended in 1979, designates the Secretary of the Interior as both the Management Authority and the Scientific Authority of the United States, for the purposes of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Management Authority responsibilities are delegated to the Associate Director—Federal Assistance; Scientific Authority responsibilities are delegated to the Associate Director—Research.

The Service's Wildlife Permit Office (WPO) functions as staff to the U.S. Management Authority for CITES, ensuring that wildlife and plants are exported or imported in compliance with laws for their protection and issuing permits for legal trade of these species. The Service's Office of the Scientific Authority (OSA) functions as staff to the U.S. Scientific Authority for CITES. OSA reviews applications to export and import species protected under CITES,

reviews the status of wild animals and plants impacted by trade, makes certain findings concerning housing and care of protected specimens, and advises on trade controls.

Eight Animals Added to CITES Appendices

In order to help control overexploitation of certain species for the exotic leather trade, the Republic of India has added seven native snakes to Appendix III of CITES. Added to CITES for the first time are the olive keelback water snake (*Atretium schistosum*), checkered keelback water snake (*Natrix piscator*), dog-faced water snake (*Cerberus rhynchops*), Indian rat snake (*Ptyas mucosus*), Indian cobra (*Naja naja*), king cobra (*Ophiophagus hannah*), and

Russell's viper (*Vipera russellii*). Through their addition to CITES Appendix III, India has given notice that these snakes are subject to regulation within its jurisdiction for the purposes of preventing or restricting overexploitation, and calls for the cooperation of other CITES Parties in controlling trade. CITES permits will be required for international trade in manufactured products made from these species. India currently bans the export of their skins.

The giant panda (*Ailuropoda melanoleuca*), which was on Appendix III, has been moved to the more protective Appendix I at the request of the People's Republic of China. Only a few giant pandas remain in the world, and they are threatened by a die-off of the arrow bamboo, their preferred food. Under CITES regulations, any international trade in Appendix I species requires permits from both the exporting and importing countries.

Regional Briefs

continued from page 11

vice, perceived infringement on States' water rights, and the Windy Gap assessment procedure. As a result, a high-level Colorado River Coordinating Committee was established, composed of the Region 6 Director, FWS; two Bureau of Reclamation regional directors; Directors of the Departments of Natural Resources from Utah and Colorado; and a representative from the Wyoming Governor's Office.

This group was established to direct a coordinated interagency approach to resolving the complex problem. It met and set up two subcommittees, biological and hydrological, to address the streamflow and biological data issues. Representatives from State and Federal agencies, water interest groups, industry, and conservation agencies are on the subcommittees. They are charged with the responsibility of analyzing the streamflow and biological data used by the Service, determining its validity, identifying data voids, and developing additional data needed. They also will be recommending various management alternatives to solve these issues in the Upper Colorado River Basin. The final objective will be to develop a coordinated conservation plan that will meet the needs of the fishes and provide for water development.

Region 7—Every March and early April, wintering Aleutian Canada geese (*Branta canadensis leucopareia*) congregate in northern California in preparation for a long migration to their Aleutian Island nesting grounds. This year, a severe coastal storm struck the northern California coast when approximately 3,000 Aleutian geese were staging at Castle Rock NWR. Dr. Paul Springer (Research-Arcata Field Sta-

BOX SCORE OF LISTINGS/RECOVERY PLANS

Category	ENDANGERED			THREATENED			SPECIES* TOTAL	SPECIES HAVING PLANS
	U.S. Only	U.S. & Foreign	Foreign Only	U.S. Only	U.S. & Foreign	Foreign Only		
Mammals	15	19	233	3	0	22	292	19
Birds	52	14	144	3	0	0	213	41
Reptiles	8	6	60	8	4	13	99	8
Amphibians	5	0	8	3	0	0	16	3
Fishes	30	3	11	12	1	0	57	26
Snails	3	0	1	5	0	0	9	6
Clams	22	0	2	0	0	0	24	1
Crustaceans	3	0	0	1	0	0	4	1
Insects	7	0	0	4	2	0	13	5
Plants	58	3	0	9	2	2	74	21
TOTAL	203	45	459	48	9	37	801	131**

* 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.

** More than one species may be covered by some plans.

Number of Recovery Plans approved: 117
 Number of species currently proposed for listing: 26 animals
 27 plants

Number of Species with Critical Habitats determined: 59
 Number of Cooperative Agreements signed with States: 40 fish & wildlife
 13 plants

April 30, 1984

tion) reports that on the following three days, 42 Aleutian geese were found dead along a three-quarter mile stretch of beach north of Castle Rock. Necropsies on nine of the birds, which appeared free of wounds, lead poisoning, and disease, indicated drowning as the cause of death. Although the number of geese killed is less than 2 percent of the total population, documentation of this type of natural mortality is significant, since Aleutian geese inhabit and migrate through a region well known for its inclement weather.

Skip Ambrose of the Fairbanks, Alaska, Field Station recently spent three weeks in the States of Texas and Washington observing peregrine falcons (*Falco peregrinus*) in areas where Alaska banded peregrines have been encountered. Although migrating peregrines were observed in both areas, the size and timing of migration was not as expected, with relatively few birds seen and no Alaska banded peregrines captured. Following his return to Alaska, Skip observed three adult peregrines along the Tanana River on April 20 and 21.

May 1984

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ENDANGERED SPECIES

Technical Bulletin

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