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ENDANGERED SPECIES

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Endangered Species Program, Washington, D.C. 20240

Stork Population Declines; Endangered Status Proposed

United States breeding populations of the wood stork (*Mycteria americana*) have declined over 75 percent from their 1930 levels. The Service has proposed Endangered status under the Endangered Species Act to protect wood stork populations residing and breeding east of the Alabama-Mississippi State line (F.R. 2/28/83).

Breeding of the species in the U.S. is now restricted to Florida, southeastern Georgia, and South Carolina. Formerly, nesting occurred in Texas, Louisiana, Mississippi, and Alabama. U.S. breeding pairs have declined from over 20,000 in the 1930's to 4,800 in 1980. If this trend continues, the birds are expected to become extirpated as U.S. breeders by the turn of the century.

The wood stork occurs from northern Argentina to the southern U.S. The present U.S. breeding population, which would be protected by the proposed rule, is disjunct from the population which breeds from Mexico to South America. Wood storks from Mexico disperse into the southern U.S. (e.g., California and Texas) after breeding.

Causes of Decline

The decline of the wood stork as a U.S. breeding bird is believed to be primarily due to the loss of suitable feeding habitat. This is especially true for the south Florida rookeries where repeated nesting failures have occurred despite protection afforded the rookeries. Feeding areas in south Florida have decreased by about 35 percent since 1900 due to man's alteration of wetlands.

In addition, man-made levees, canals, and floodgates have greatly changed natural water regimes in south Florida. Optimal water regimes for the wood stork involve periods of flooding, during which prey fish populations increase, alternating with drying periods, during which fish are concentrated at high densities during the nesting season.

Loss of nesting habitat (primarily cypress swamps) may be affecting wood storks in central Florida where nesting in non-native trees and in man-made impoundments have been occurring recently. Raccoon predation has sometimes been severe at certain central Florida rookeries. Disturbance by humans during the nesting season has been observed to cause adult wood storks at some rookeries to leave their nests, exposing eggs and young birds to predation and the elements.

Critical Habitat Not Proposed

Critical Habitat is presently considered neither prudent nor determinable for the U.S. breeding population of the wood stork. Wood stork rookeries and feeding areas change over time and rigidly defined Critical Habitat boundaries describing presently utilized areas may not be adequate for long-term conservation of the species.

The wood stork's feeding area may be separated by large (up to 130 km) distances from its rookeries, and post-breeding dispersal of the U.S. breeding birds extends throughout most of the southeastern U.S. Inclusion of such large areas, even though they may be important to the birds' biology, would be misleading because the stork uses only very limited resources over these large areas. Finally, publication of Critical Habitat maps in the *Federal Register* as required by Section 4(b)(5) of the Act, might increase the chance that wood stork rookeries would be subjected to uncontrolled human disturbance or vandalism.

Effects of Rule

Under Section 7 of the Act, Federal agencies must insure that any activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species. The principal agency affected by listing the wood stork as Endangered would be the U.S. Army Corps of Engineers, which issues permits for the discharge of dredged or fill materials in U.S. waters under Section 404 of the Clean Water Act of 1977. The Corps also carries out Congressionally authorized water development projects. The listing of this species could also affect future permitting activities by the Environmental Protection Agency (EPA), under Section 402 of the Clean Water Act. No present conflicts with potential EPA permits are known to the Service.

Conservation of the wood stork would allow the species to continue to serve as an ecological indicator of wetland health and to provide pleasure as a natural attraction, particularly in Florida. The wood stork is the only North American breeding stork and is an important attraction at heavily visited natural areas such as Everglades National Park and Corkscrew Swamp Sancturary in south Florida.

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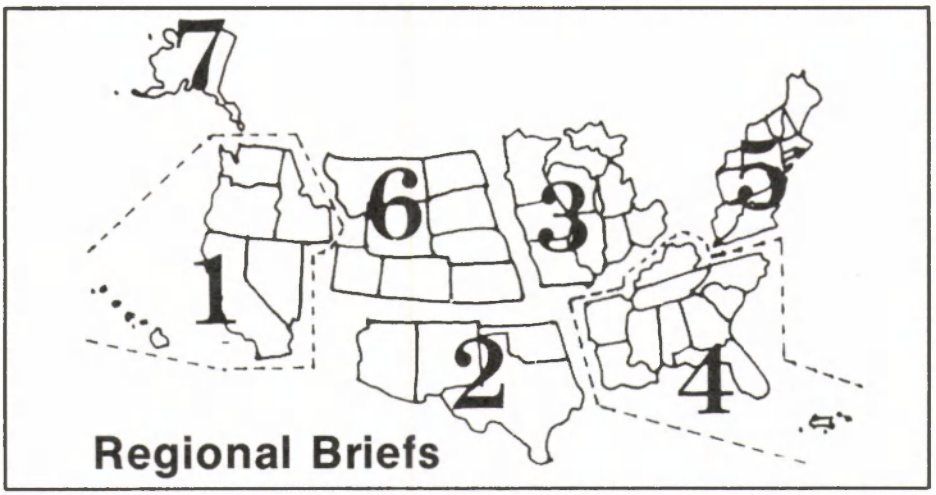
Courtesy of Florida Audubon Society

*The wood stork (*Mycteria americana*) is a large, long-legged, white wading bird with an unfeathered head and stout bill.*



Regional Briefs

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

Region 1—For the first time, *Natural History* magazine has devoted practically a complete issue to one geographic region. Its December 1982 edition, entitled "Hawaii—Showcase of Evolution," presents an overview of the State's unique natural history from the first plants and animals to colonize the volcanic islands, through today's ecological modifications, into a future of environmental change and choice.

Two of the ten articles in the issue were authored by members of the Service's Pacific Islands Office in Honolulu. Dr. Robert J. Shallenberger, manager of the Hawaiian and Pacific Islands National Wildlife Refuge Complex, writes of the factors limiting the population and distribution of the Endangered Hawaiian monk seal (*Monachus schauinslandi*). John I. Ford, a fishery biologist in Environmental Services, relates the evolutionary biology and adaptive strategies of stream fauna in Hawaiian and Pacific high island streams. Other articles focus on specific aspects of a Pacific species or group of species, and help to illustrate Hawaii's fragile ecosystem.

A record number of Hawaiian monk seals were observed on Tern Island on January 29, 1983, when 102 were seen basking on the beaches of the former Coast Guard LORAN station. The island is part of the Hawaiian Islands National Wildlife Refuge.

The Sacramento Endangered Species Office (SESO) staff conducted an educational field trip survey of valley elderberry longhorn beetle habitat (*Desmocerus californicus dimorphus*) for the U.S. Army Corps of Engineers. Specific habitat along the Sacramento River was walked, and valley elderberry (*Sambucus* ssp.) with characteristic beetle borings were examined. Such field trips promote coordination and assistance from Corps personnel in identifying potential endangered species concerns.

Data on the life history of the Delta green ground beetle (*Elaphrus viridus*) will be collated and evaluated by Dr. Richard Arnold of the University of California at Berkeley and Dr. David Kavanaugh of the California Academy of Science. This study is partially funded by The Nature Conservancy and will be conducted from February through April 1983.

The Service is committed to funding a 3-year program designed to stop the decline of the Morro Bay kangaroo rat (*Dipodomys heermani morroensis*). This program is directed toward determining and monitoring the population status of this "k-rat," investigating and identifying generic and microhabitat characteristics, and developing a habitat management plan. These activities, which are pursuant to the recovery plan, are being designed by SESO and monitored by the California Department of Fish and Game (CDFG). The research began in January 1983, and the k-rat and vegetative studies are being conducted by faculty at the California Polytechnic State University at San Luis Obispo. The removal of exotic vegetation and clearing of dense vegetation is being conducted by the California Conservation Corps. The Service and CDFG hope that these efforts will provide preferred habi-

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U.S. Fish and Wildlife Regions

Region 1: California, Hawaii, Idaho, Nevada, Oregon, Washington, and Pacific Trust Territories. **Region 2:** Arizona, New Mexico, Oklahoma, and Texas. **Region 3:** Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. **Region 4:** Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Puerto Rico, and the Virgin Islands. **Region 5:** Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia. **Region 6:** Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. **Region 7:** Alaska.

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Service Announces Findings on Petitions and Status Reviews

Initial findings on substantiality of information for some petitions pending on October 13, 1982, and on other petitions received subsequently, have been published by the Service (F.R. 2/15/83). This was done to implement Section 4(b)(3)(A) of the Endangered Species Act, as amended in 1982, which requires that the Service determine if a petition to list or delist a species presents substantial scientific or commercial information warranting action. To the maximum extent practical, such findings are to be made within 90 days of receipt of the petition, and published promptly in the *Federal Register*. When a positive finding is made on a petition to list or delist a species, the Service is required to promptly commence a status review. Section 4(b)(3)(D)(i) requires a similar procedure for processing petitions to revise Critical Habitat.

Further, Section 2(b)(1) of the 1982 amendments requires that all petitions pending on October 13, 1982 (when the amendments were signed into law), be treated as having been newly submitted on that date. Although this makes such past petitions subject to the new procedures, it provides that such new requirements "shall be deemed to be complied with" if similar requirements were satisfied before enactment of the 1982 amendments. The Service has used the criteria in 50 CFR 424.14 to define and evaluate petitions, and to distinguish them from general comments. All comments and petitions submitted to the Service after December 28, 1973, when the Endangered Species Act of 1973 was signed, were reviewed.

Most of the petitions had already been judged on their substantiality of information, and status reviews had been initiated when the findings were positive. The February 15, 1983, notice lists those petitions for which findings of substantiality required under Section 4(b)(3)(A) or 4(3)(D)(i) had not already been made, as well as several petitions submitted after October 13, 1982, and gives the findings on each one. Five of the species affected under these petitions have now been placed under notice of review: a Guam plant, hayun lagu (*Serianthes nelsonii*); three listed kangaroos (*Macropus rufus; M. giganteus*, and *M. fuliginosus*); and the San Francisco tree lupine moth (*Grapholitha edwardsiana*). The Service is soliciting data on the status of these species.

By October 13, 1983, the Service must decide if the petitioned action is warranted for petitions that were pending on October 13, 1982, and for which findings of substantial information have been made. The majority of petitioned species requiring analysis by October 13, 1983, are the nearly 3,000 plants in categories 1 and 2 of the December 15, 1980, notice of review. For petitions received *after* October 13, 1982, a decision is required within 12 months of receipt of the petition.

Section 4(b)(3)(B) requires that petitioned species for which listing is warranted be proposed promptly, or that an explanation be provided in the *Federal Register* on why prompt proposal is not possible and on the progress in listing that is being made.

Designated Ports for Plants Proposed

The designation of ports of entry for the importation, exportation, or reexportation of plants is required by Section 9(f) of the Endangered Species Act of 1973, as amended. The Service recently proposed to designate such ports, coordinating its selection with the list of ports currently used by the Department of Agriculture (USDA) to implement several other Federal laws (F.R. 2/28/83).

Designation of specific ports of entry would facilitate the inspection process required by another provision of the Act, that listed plants be accompanied by certain required documentation. No such ports have ever been designated for plants.

USDA currently conducts an extensive enforcement program at many ports under the Federal Plant Pest Act and the Plant Quarantine Act for the purpose of preventing the introduction into the United States of certain plant diseases, injurious insects, and other plant pests. Under the Endangered Species Act, USDA is also responsible for enforcement of provisions which pertain to the importation, exportation, or reexportation of terrestrial plants, and will be required to conduct enforcement activities at designated plant ports of entry.

Consequently, USDA has recommended that the ports proposed under the Act as ports of entry for plants coincide with those ports already designated and staffed to implement the above two pieces of legislation. The Service, therefore, has proposed that the following 14 USDA ports be established as designated ports for import, export, or reexport of any plants, including listed plants: Nogales, Arizona; Los Angeles, San Diego, and San Francisco, California; Miami, Florida; Honolulu, Hawaii; New Orleans, Louisiana; Hoboken, New Jersey (Port of New York); Jamaica, New York; San Juan, Puerto Rico; Brownsville, El Paso, and Laredo, Texas; and Seattle, Washington.

In addition, USDA has recommended and the Service proposed that the following ports be established to monitor traffic in particular groups or species of protected plants: Hilo, Hawaii and Chicago, Illinois—listed plants of Orchidaceae; Milwaukee, Wisconsin—roots of *Panax quinquifolius* (American ginseng); and Detroit, Michigan; Buffalo and Rouses Point, New York; and Blaine, Washington—listed plants from Canada and listed plants going into Canada. USDA has further recommended and the Service proposed that all USDA ports and all U.S. Customs ports on the U.S.-Canada border be designated ports for plants not required to be accompanied by documentation.

Written comments on this proposal should be mailed to: Director (LE), Fish and Wildlife Service, P.O. Box 28006, Washington, D.C. 20005, or delivered weekdays to the Division of Law Enforcement, U.S. Fish and Wildlife Service, 2nd Floor, 1375 K Street, N.W., Washington, D.C. 20005 between 7:45 a.m. and 4:15 p.m. Comments should bear the identifying notation REG 24-02-1, and must be received on or before May 31, 1983.

Service Reopens 5-Year Review Comment Period

The Service initiated a review of plants and animals listed during 1977 under the Endangered Species Act of 1973 to insure the species' most current status is actually reflected by the Endangered or Threatened classification now assigned them (F.R. 9/27/82). The Service has received several requests to extend the comment period for this review and, therefore, has extended it from January 25, 1983, to May 4, 1983 (F.R. 2/3/83).

The September 27 notice lists those species under review and directs persons wishing to submit comments to the appropriate regional office of the Service. (Please see the October 1982 BULLETIN for this information.)

CITES NEWS—February 1983

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, assuring 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.

Amendment Overrules Bobcat Decision

Criteria for the export of bobcat (*Lynx rufus*) under CITES were clarified by a recent amendment to the Endangered Species Act of 1973. The amendment to Section 8A of the Act, and the subsequent removal of a court injunction against bobcat exports, have allowed the Service to establish February 3, 1983, as the effective date for final findings to authorize the export of bobcats taken during the 1981-82 harvest season (F.R. 2/23/83).

Final findings, along with a final rule, on bobcat exports for the 1981-82 harvest season were published over 17 months ago (F.R. 10/14/81). The originally determined effective date for this rule, however, was suspended, pending the removal of an injunction by the U.S. District Court for the District of Columbia. The decision to vacate the injunction, which was removed on December 23, 1982, is now being appealed by Defenders of Wildlife.

The 1982 amendment to Section 8A of the Act overrules a 1981 court ruling which required population estimates by State wildlife agencies as part of the criteria for export of bobcat. The amendment states that export determinations and advice should be based on "the best available biological information derived from professionally accepted practices used in wildlife management...." It also states that population estimates are not required.

The Service reviewed its October 1981 findings and rule in terms of the new amendment, and determined that they are consistent with it. Both the findings and the rules became effective February 3, 1983.

Proposed 1982-83 Findings

Supplementary findings on the export of bobcats taken in the 1982-83 season, as well as comments on the Service's proposed guidelines used in making such findings (F.R. 8/20/82), were published recently (F.R. 2/23/83). The Service will consider information and comments received by March 25, 1983, in making its final findings and rule. Correspondence concerning the February 23, 1983, notice should be sent to the Office of Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

The Service proposed to approve exports of bobcats harvested during the 1982-83 season in the following States and Indian Nations on the grounds that both Scientific Authority (SA) and Management Authority (MA) guidelines are met: Alabama, Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Kansas, Klamath Tribe, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Navajo Nation, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Carolina, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

The Service also proposed not to grant general approval for exports of bobcats harvested in North Dakota. The Service presently lacks information that its SA guidelines are met in this State.

Aside from information submitted by State wildlife agencies, the only comments received in response to the August 20, 1982, notice were submitted by the law firm of Covington and Burlington on behalf of both Defenders of Wildlife and the Humane Society of the United States. These comments are summarized in the February 23, 1983, proposed rule.

NMFS Begins 5-Year Marine Species Review

The National Marine Fisheries Service has begun a status review on 19 marine species now listed for protection under the Endangered Species Act of 1973, as amended (F.R. 2/9/83). The Act requires that such a review of all species included in the List of Endangered and Threatened Wildlife and Plants be conducted at least once every 5 years

To ensure that the reviews are complete and are based on the best available scientific and commercial data, NMFS is soliciting data, information, and comments concerning the biological status of these species from any interested party. Such submissions should be accompanied by: (1) The scientific and common names of the species involved;

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Species Under Review

Fishes:	
Shortnose sturgeon	*Acipenser brevirostrum*
Totoba (seatrout or weakfish)	*Cynoscion macdonaldi*
Reptiles:	
Green sea turtle	*Chelonia mydas*
Hawksbill sea turtle	*Eretmochelys imbricata*
Kemp's Ridley sea turtle	*Lepidochelys kempii*
Leatherback sea turtle	*Dermochelys coriacea*
Loggerhead sea turtle	*Caretta caretta*
Olive Ridley sea turtle	*Lepidochelys olivacea*
Mammals:	
Carribean monk seal	*Monachus tropicalis*
Hawaiian monk seal	*Monachus schauinslandi*
Mediterranean monk seal	*Monachus monachus*
Blue whale	*Balaenoptera musculus*
Bowhead whale	*Balaena mysticetus*
Fin whale (finback whale)	*Balaenoptera physalus*
Gray whale	*Eschrichtius robustus*
Humpback whale	*Megaptera novaeangliae*
Right whale	*Balaena glacialis*
Sei whale	*Balaenoptera borealis*
Sperm whale	*Physeter catadon*

Only Known Ferret Population Receives Careful Attention

About a year and a half ago, the search for North America's rarest mammal finally met with success. A small, weasel-like animal was killed in September 1981 by a dog on a northwestern Wyoming ranch, and was taken to an alert taxidermist who recognized it as a black-footed ferret (*Mustela nigripes*). Today, a team of Federal, State, and university biologists, along with a State land board representative and a private landowner, is coordinating research and management on the only known ferret population in an effort to safeguard its existence and to locate any other populations.

The dead ferret was the first specimen found in recent years; in fact, some disappointed researchers had come to suspect that the species might be extinct. After the discovery, the carcass was turned over to the Ecology Section of the Service's Denver Wildlife Research Center (DWRC), which had been searching for ferrets in Wyoming since 1978. The Section assembled a group of scientists to conduct a detailed necropsy on the dead animal. Private researchers began surveying prairie dog towns in the vicinity of the find to map potential ferret habitat. At about the same time, Service and State representatives hosted a meeting at Meeteetse, Wyoming, near the site of the discovery, to discuss the find with area ranchers, townspeople, private research consultants, and representatives of land managing agencies, and to solicit other ferret sightings. At that meeting, an employee of a local ranch reported seeing a black-footed ferret in a white-tailed prairie dog (*Cynomys leucurus*) town about 3 miles from where the dead ferret had been found. With the cooperation of the land-owner, the ranch hand led Wyoming Game and Fish Department, Bureau of Land Management (BLM), and Fish and Wildlife Service (FWS) biologists to the spot of the sighting. During a brief search of the area, some ferret sign was found but no live animals were seen.

A few days later, DWRC biologists Stephen Martin and Dennie Hammer were spotlighting for ferrets while driving back to the site when they saw the green eye-shine of a black-footed ferret at the side of the dirt road directly in front of them. After the animal dived into a nearby prairie dog hole, they approached and, at last, came face-to-face with a live individual of this elusive species. Quickly, they placed a tubular trap in the burrow opening and after an 11-hour wait, captured a young adult male ferret. The unharmed animal was taken to a veterinarian in Meeteetse where it was anesthetized, examined, and fitted with a radio-collar. After its release the next day, the ferret was tracked for about 14 days. Most of the ferret's above-ground activity occurred at night, although some daytime movements were observed. After the radio failed, the ferret was retrapped for removal of the radio-collar. An examination of the animal revealed no ill effects from the experience.

Among the data gathered on the ferret during the initial phase of the DWRC study was information on periods of above-ground activity, distances moved, the number of times each prairie dog burrow was used for a den, and the total number of burrows used within an area of activity. Perhaps more important was the discovery of other ferrets in the area, proof that at least one population still exists.

* * * * *

The black-footed ferret apparently never occurred in great numbers. Early records of the animal are scarce, due in part to the animal's nocturnal and secretive habits. Plains Indians were aware of the ferret, and used its skins during their ceremonies. The first recorded reference to the black-footed ferret was in 1851, when naturalists John James Audubon and Reverend John Bachman described it as a species from a single skin given to them by a Wyoming trapper.

The ferret's vast historical range corresponded with that of the prairie dog, and extended north across the shortgrass prairie from Texas and Arizona to the Canadian provinces of Alberta and Saskatchewan. Ferrets have almost always been found only within prairie dog towns, since they rely on the rodents almost exclusively for prey and for burrows in which to live and raise their young. It was this close association with prairie dogs that led to the downfall of the ferret.

As the livestock industry grew in the late 1800's, the prairie dog came to be considered as a competitor with livestock for the limited forage. Intensive eradication programs were conducted throughout the Great Plains States from the 1920s through the 1960s, and subsequent control efforts have kept prairie dogs at relatively low numbers over most of their former range. In addition to reducing the ferret's food supply, prairie dog control efforts probably killed ferrets directly. The poison gases pumped into burrows were nonselective, and certain toxic chemicals in baited grain may have had secondary effects as they passed up through the food chain. Extensive plowing of the grasslands also deceased the habitat for both animals.

Although the prairie dog still occupies much of its former range, its numbers

Photo by Franz Camenzind

The black-footed ferret is a slender, elongate carnivore well adapted to hunting its chief prey, the burrow-dwelling prairie dog. It is identified by its distinctive black mask, black feet, and black-tipped tail which contrast with its tan sides and back. The radio-collar placed on this ferret yielded valuable data on the animal's movements and behavior.

today are only a small fraction of those estimated for the late 1800's. The black-footed ferret undoubtedly declined sharply with the reduction and local eradication of the prairie dog. By the time the original Federal list of Endangered species was published in 1967, the ferret had long deserved inclusion. Before the Meeteetse discovery, the last confirmed sighting of a wild ferret was in 1979 in South Daktoa. The only population formally studied was found in South Dakota in 1964. It was observed for about 10 years, but then it inexplicably disappeared. A few ferrets that had been taken to the Service's Patuxent Wildlife Research Center for captive breeding died from old age and disease (possibly resulting from genetic problems associated with inbreeding). Probable sightings are reported regularly from locations throughout much of the ferret's historical range; unfortunately, follow-up searches have been unsuccessful. Many of those searching for the elusive ferret held out hope that it might still exist, but the lack of firm evidence led to doubt in some others, and the Meeteetse find may have occurred just in time.

* * * * *

Fish and Wildlife Service research on the Meeteetse ferrets has continued since the first animal was captured, but at a cautious pace. Spotlight observations revealed that the ferrets usually were active four times in each 24 hours, for an average of just over an hour at a time. These activity periods were mostly nocturnal and crepuscular. To supplement the data on ferret movements gained by observation, the DWRC biologists were granted a permit by the State of Wyoming in spring 1982 to place radio-collars on six young-of-the-year ferrets. With the assistance of the independent ISU/Biota researchers, nineteen animals, some of them adults, were carefully trapped and examined during the summer 1982 field season, and the authorized number of young were collared. It was necessary to trap this number of ferrets to obtain the desired ratio of three males and three females. Because the collars allowed for growth, there were recurring problems with keeping them on the necks of the young animals. One ferret did retain its collar for 109 days, yielding valuable data on movement and behavior.

Independent Research

At about the same time the FWS was notified about the ferret discovery near Meeteetse, Dr. Tim Clark, an independent wildlife biologist with a long-time interest in the species, also was contacted. Clark, an adjunct professor at Idaho State University (ISU) and president of Biota Research and Consulting, Inc., has been in search of the black-footed ferret since 1973, surveying prairie dog towns for ferret sign and gathering sighting reports. He spent most of each summer talking with various ranchers, conservationists, and biologists, and distributed "wanted" posters offering a reward for information leading to the discovery of a ferret in Wyoming. Eventually, after 8 years of leads and clues, the trail led to the ranch where the dead ferret was found in September 1981.

Immediately after the dead ferret was turned in, Clark and his colleague, Tom Campbell, were contacted by the landowner and began surveying the general area for prairie dog colonies. Beginning in December, teams of private researchers were brought in to a nearby ranch, where the DWRC had located the core population, to work through the winter. The ranch manager, who has been very interested in the well-being of the ferret, granted permission for access, and funding was contributed by a wide variety of conservation and scientific organizations. ISU/Biota's long-term study, which is still continuing, is designed in part to determine ferret distribution, evaluate survey techniques, and study the species' behavior and ecology.

Although the research results so far are preliminary, they do hold promise. In July 1982, the ISU/Biota teams estimated a population minimum of 59 ferrets, including 21 adults. These figures may change as survey techniques are refined, as research teams obtain better data, and as the population responds to programs to increase or maintain this rare species. In addition, extensive records of various types of ferret sign found at the Meeteetse site will improve future survey techniques. For example, characteristic ferret diggings were photographed at intervals to record patterns of deterioration. This is expected to help in the recognition of diggings even when they are not fresh. Further, the researchers found a marked seasonality on the type, density, and persistence of certain ferret sign; winter was proven to be a good time to survey for ferret sign on white-tailed prairie dog towns. Clark, two of his colleagues, and DWRC Black-footed Ferret Project Leader Max Schroeder are now developing a handbook on ferret sign identification and survey techniques.

In their work outside the core population, the ISU/Biota teams have mapped 20 nearby prairie dog towns and have found ferrets up to 16 kilometers away. Throughout the area, most people have been very helpful by permitting access and providing information. The field work has been planned to respect the views of landowners as well as to minimize disturbance of the ferrets.

Clark reports that other projects currently underway include: ethological studies; development of a ferret bioenergetic model; analyses of ferret skeletal remains, salivary enzymes, scats, and hair; and a major effort to locate ferrets elsewhere.

Advisory Team

When the Meeteetse ferret population was first discovered, scientists interested in the elusive creature were quite

Photo by FWS, Denver Wildlife Research Center

Ferrets digging in prairie dog burrows often leave behind trench-like tailings of loose dirt.

naturally elated. The find was considered extremely significant, and there was no shortage of suggestions on how to proceed with research and management. Concern developed that because of the unique situation, rediscovery of an extremely rare species, there might be a rush to develop a large-scale project that could jeopardize the vulnerable population. In order to coordinate activities at the site and restrict unnecessary disturbance to the animals, the Wyoming Game and Fish Department assumed the lead in the ferret program.

The Department then formed a Black-footed Ferret Advisory Team (BFAT) to: 1) coordinate research and management; 2) ensure that only high priority, sound research is conducted; and 3) ensure that its decisions would meet with agreement from the major land managers in the area. Among the BFAT members are representatives of the Wyoming Game and Fish Department, Wyoming State Land Board, University of Wyoming, FWS, BLM, U.S. Forest Service, and the landowner whose ranch contains most of the habitat occupied by the Meeteetse population. At this time, the BFAT is providing guidance to the Department on the Meeteetse ferrets, but eventually its efforts may be extended statewide. The team may be expanded to include representatives of any other landowners that might be affected by ferret management if other populations are found.

The ferret research that has been conducted thus far is of a preliminary nature, and it sets the stage for development of a comprehensive, long-term research and management program. One of the BFAT objectives is to obtain funding for this program. Financial assistance is being sought from Federal agencies, conservation and scientific organizations, and certain industries that are interested in the area. Using a $30,000 FWS Section 6 Endangered Species grant, the Department recently hired Dave Belitsky to serve as the State's Black-footed Ferret Program Coordinator. His role includes: 1) integrating the individual research projects under an interim management plan, 2) seeking out new sources of funding, 3) determining important ferret habitat requirements, 4) serving as a contact for the public and the media on matters relating to the ferret in Wyoming, and 5) continuing the search for other ferret populations.

The Future

One problem facing the black-footed ferret continues to be its close association with the prairie dog. As prairie dog towns expand in some areas, there will be more requests for intensified control programs. The challenge will be to minimize the potential impacts of such efforts on any ferrets that might be present. Improved surveys for ferret occurrence, application of toxicants that do not have secondary effects, and non-toxic control techniques are among the methods now being developed.

Perhaps a more serious factor to consider, especially with regard to the Meeteetse population, is oil and gas development. The area lies within the Overthrust Belt, a geological formation with rich energy potential. Some researchers have voiced concern that oil/gas exploration, drilling, and associated construction in the immediate vicinity of the ferret population could jeopardize the animals through disturbance (especially during the breeding season), burrow collapse, spills of toxic substances, and increases in road kills, among other factors. Consultations are underway between the FWS and BLM, in cooperation with the Minerals Management Service, to find alternatives that would avoid jeopardizing the population, and BLM is funding a study of the effects of seismic activity on prairie dog towns. The study is being conducted by the FWS Cooperative Wildlife Research Unit at the University of Wyoming.

The core population of the Meeteetse ferrets has the good fortune of living on a ranch whose owners over the years have maintained an active interest in both wildlife and range conservation. The large ranch was one of the last places in Wyoming to harbor wild bison, and it was influential in reestablishing pronghorn antelope herds from wild stock within its boundaries. The range managed by the ranch still supports both wildlife and livestock, and grazing lands are being maintained in good condition, proving that conservation and agriculture can be compatible. The current ranch manager, who has served as a leading member of the BFAT since its inception, is particularly concerned about the well-being of the ferret. A few oil wells were constructed on State lands managed by the ranch prior to discovery of the ferrets, but the ranch operators have deferred subsequent offers from seismic companies engaged in further oil and gas exploration for testing on prairie dog towns until research determines the best means of minimizing the potential adverse effects. This amounts to a voluntary commitment of tens of thousands of dollars in potential revenues toward conservation of ferrets on the ranch.

It is clear from the discovery at Meeteetse that man and ferrets can co-exist. The BFAT recognizes this fact and, on private land, the ranchers with ferrets on their property retain control. It has been speculated that some landowners have been reluctant to report ferret sightings because of concern that a government agency might condemn the property for a refuge or try to dictate ranch management practices. Neither of these approaches is being considered by the FWS or State of Wyoming; instead, these agencies are seeking to work with affected landowners in a cooperative spirit. Any research and management activities would only be carried out with the landowners' approval. With good information, multiple use can often be integrated with management of a rare species so that neither is hurt.

As the result of a successful January 1983 meeting among State, FWS research staff, private interests, and oil/gas industry representatives, the companies interested in the Meeteetse area decided not to request permission for further drilling on the ferret site during 1983. Instead, they will spend this time drawing up a development plan that will outline their objectives for future years. Concurrently, Federal, State, and independent biologists will continue research into accommodating both energy production and wildlife conservation.

Recovery

The Wyoming Game and Fish Department, FWS, and BLM, with guidance from the BFAT, is developing a compre-

Photo by FWS, Denver Wildlife Research Center

Fish and Wildlife Service biologist tracking radio-collared ferret near Meeteetse, Wyoming.

hensive ferret research and management program using the Black-footed Ferret Recovery Plan as a base. Since the recovery plan was approved by the FWS in 1978, before the discovery of ferrets near Meeteetse, adjustments will be made as more knowledge is gained. The primary objective of the plan is: to "maintain at least one wild self-sustaining population of black-footed ferrets in each state within its former range." Obviously, a major part of the recovery effort will be to locate any other populations within the ferret's historical range that might still exist. Captive propagation and reestablistment of additional populations on secure habitat not used for agriculture are long-range possibilities that may be considered.

The information gained from the ferret research in Wyoming will be of great value in future surveys. Traditionally, ferrets were thought to be associated primarily with black-tailed prairie dog (*Cynomys ludovicianus*) towns, which are to the east of the white-tailed prairie dog range, and surveys were usually concentrated in these areas. But now that the Meeteetse discovery has reinforced the fact that ferrets can be found with white-tailed prairie dogs, biologists now have even more potential habitat in which to search for the ferret. With the improved techniques and new information on ferret behavior, it is likely that some previously surveyed habitat will be looked at again. in view of the ferret's secretive habits, the enormous size of its historical range, and the incompletely tested survey methods used in the past, it is possible that some populations could have escaped discovery. The limitations of spotlighting, one traditional technique, were illustrated when the DWRC team documented that a ferret can remain underground for at least 6 nights at a time. Development of scent attractants, chemical analysis of scats, improved training of dogs to detect ferret scent, or other new survey methods developed from observation of the Meeteetse ferrets could also help someday in the hunt for other populations. Dennie Hammer is now working under an FWS-funded program at the Cooperative Wildlife Research Unit, University of Wyoming, to test scent lures for attracting ferrets.

Fortunately, even though ferrets are not easy to detect, sightings are still being reported. From January 1981 through January 1983, the following numbers of probable or confirmed reports from areas outside Wyoming were received by the Service's Pierre, South Dakota, Endangered Species Office, which is keeping the records: South Dakota (12), Utah (3), Montana (2), Colorado (2), and Nebraska (1). Follow-up surveys are being conducted by State, Federal, and independent biologists as far as research budgets allow.

As the BULLETIN was going to press, the Service announced the first round of Fiscal Year 1983 State endangered species grants authorized under Section 6 of the Endangered Species Act. Grants for State projects on the ferret include: Montana, $33,000 for ferret surveys and any subsequent population studies; Wyoming, $30,000 for research and management; and Utah, $12,000 for ferret surveys. These projects will complement the FWS-funded studies already being conducted by the DWRC in cooperation with other members of the BFAT.

WOOD STORK

Continued from page 1

Comments Solicited

Interested persons or organizations are requested to submit comments on this proposed rule to: Endangered Species Supervisor, U.S. Fish and Wildlife Service, 2747 Art Museum Drive, Jacksonville, Florida 32207. Comments must be received by April 29, 1983. Public hearing requests must be received by April 14, 1983.

A notice of review of the status of the U.S. breeding population of the wood stork was published earlier (F.R. 2/16/82). This notice solicited biological information on the status of the bird as well as information on activities which might be detrimental to the species or be affected by listing the bird or by designating its Critical Habitat.

NMFS

Continued from page 4

(2) Supporting documentation, such as maps, bibliographic references or reprints of pertinent publications; and (3)The sender's name, address, and any association, institution, or business that the party represents. This request is designed to obtain only data that have become available since the most recent rule-making concerning a listing action for each species being considered.

Comments, information, and data must be received by May 31, 1983, and should be sent to the Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Washington, D.C 20235. All submissions will be responded to in writing.

REGIONAL BRIEFS

Continued from page 2

tat into which the k-rat will expand its range and population.

The CDFG approved the taking of all first California condor eggs (*Gymnogyps calfornianus*) eggs, as well as approving an additional bird for captive breeding and two additional birds for radio-telemetry (see January 1983 BULLETIN). SESO and regional staff representatives met with research specialists, the California Condor Recovery Team, CDFG, zoo officials, and other invited experts to discuss a proposed further acceleration of the condor capture and captive breeding effort. All generally agreed that an accelerated program, which would include the taking of eggs and nestlings in 1983, should be recommended to the Fish and Wildlife Service. This is the best option to ensure adequate genetic representation while still maintaining a wild population.

Permission was given by the California Game and Fish Commission on January 31, 1983, for taking first eggs of the season from any condor nest for artificial incubation. Accordingly, on February 23, a first egg was taken from the pair that lost two eggs last season from an accident during a domestic squabble and from predation by ravens, *Corvis corax* (see March and May 1982 editions of the BULLETiN). The egg was carried in an incubator suitcase and taken by helicopter to the San Diego Zoo for further incubation.

Condor #1, the first radio-tagged condor, has continued to spend most of its time in the western foothills of the southern Sierras. It is occasionally seen with other condors. SESO staff members met with U.S. Forest Service personnel to examine several timber sales in areas newly identified as condor habitat. The Forest Service was very receptive to modifying projects, as needed, to protect condor habitat.

Oregon Department of Fish and Wildlife inventories of the Bear Valley eagle roost in southern Oregon disclosed approximately 150 bald eagles (*Haliaeetus leucocephalus*) utilizing the roost site this winter. A Klamath Falls agent spent 2 days monitoring powerlines for carcasses of electrocuted eagles and other raptors in eagle concentration areas. An investigation was opened on a power company after the burned carcasses of a golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), and great horned owl (*Bubo virginianus*) were found beneath two powerline poles. Another investigation was prompted by the discovery of two golden eagles found dead beneath a pole near Madras, Oregon. These carcasses have been shipped to the National Fish and Wildlife Health Labor-

atory in Madison, Wisconsin, for necropsies. Death of an immature bald eagle found in a livestock yard near Klamath Falls is also being investigated.

Region 2—Human intrusion into a cave that serves as a hibernaculum for the Endangered Ozark big-eared bat (*Plecotus townsendii ingens*) was reported recently. The bats, which are especially vulnerable to disturbance during hibernation, comprise about 10 percent of Oklahoma's population of overwintering big-ears. The Service has had difficulty preventing such disturbance activity because the cave is on private land, but it is attempting to initiate efforts aimed at negotiating a conservation easement.

The third season of razorback sucker (*Xyrauchen texanus*) spawning began recently at Dexter National Fish Hatchery. Over 2 million eggs have already been collected, and it appears that the region may be able to stock well over 3 million fry into historic Arizona stream habitat in 1983.

Representatives of Regions 2 and 6 met recently to discuss the Upper Colorado River Conservation Plan, Section 7 consultation coordination, and other matters of mutual interest. The need for a Lower Colorado River Conservation Plan, closer coordination of the San Juan River and black-footed ferret (*Mustela nigripes*) consultations, and other species-specific matters (whooping crane, *Grus americana*; woundfin, *Plagopterus argentissimus*; razorback sucker; etc.) were the main topics covered.

Region 3—Regional Office personnel met recently with representatives of several States and corporations to work toward a Conservation Agreement for the Illinois mud turtle (*Kinosternon flavescens spooneri*).

Indiana is in the process of applying for an Endangered Species Cooperative Agreement under Section 6 of the Endangered Species Act. The State already has several projects in mind for bald eagle reintroduction and cave protection. Indiana will probably contact other States to initiate some joint projects.

Region 4—The pygmy sculpin (*Cottus pygmaeus*) occurs only in Coldwater Spring and its outflow near Anniston, Alabama. This spring also serves as the primary water supply for the city of Anniston. Anniston uses approximately one-half the spring flow of over 30 million gallons per day.

In 1979, the Service reviewed the status of the pygmy sculpin in considering this species for listing. For various reasons, it was decided to protect this species through a Memorandum of Understanding (MOU) with the city of Anniston rather than to list it. The MOU affords the pygmy sculpin protection because Anniston has control of Coldwater Spring and its watershed, and is interested in preserving the sculpin and its habitat.

Despite these good intentions, a near disaster struck the sculpin and Coldwater Spring on January 4, 1983. Water began to undermine the concrete spillway and resulted in a blowout that let the entire spring flow go under the dam. During the 12 hours it took to construct a temporary dam, the water level dropped approximately 18 inches, exposing some of the habitat. Undoubtedly, some fish were lost during the blowout and the temporary repairs. Within a few hours of repairs, the water level returned to within 6 inches of full pool with all the sculpin habitat restored.

Anniston is working to make permanent repairs to the dam, and is cooperating with the Service to ensure that the sculpin suffers the least possible impact during these repairs. Without the immediate efforts of the Anniston Water Board, it is likely Coldwater Spring would have drained to only the spring run. Such a loss of over half the pygmy sculpin habitat would likely have resulted in a similar loss of the species.

Region 5—A large number of peregrine falcons (*Falco peregrinus*) have been reported recently from Virginia. Most were sighted along the coast, although a few were inland. These are thought to be reintroduced birds, and it is anticipated that some might nest at the hacking/nesting towers that have been constructed as part of the recovery effort.

Region 6—The Laramie false sagebrush (*Sphaeromeria simplex*), a member of the Asteraceae family, is not a proposed or listed species, but it is a protected species thanks to the Monolith Portland Cement Company located south of Laramie, Wyoming. The company granted a Conservation Easement to The Nature Conservancy for the plant. The easement is the result of special efforts by Mr. Jim Briggs, Manager of Monolith Portland's Laramie Office; Mr. Robert Kiesling, Montana Big Sky Field Office, The Nature Conservancy, Helena, Montana; Mr. Robert Lichvar, Wyoming Natural Heritage Program, Cheyenne, Wyoming; and Dr. Jim Miller, U.S. Fish and Wildlife Service. The taxon is endemic to Wyoming and is currently represented by a single population occupying a specialized habitat. The plant grows on a limestone substrate, which may also contain gypsum, with shallow pockets of surface soil at the base of each plant. Several members of the genus *Sphaeromeria* are being surveyed for cancer inhibiting properties by professors at the University of Wyoming. Of the nine species of *Sphaeromeria*, three (including *S. simplex*) are candidates for future listing.

The June 1982 issue of the BULLETIN discussed the Colorado River Fishery Monitoring Program (CRFMP) begun in 1982 by the Service and Bureau of Reclamation. The study was designed to verify and build upon work completed in the 1979-81 Colorado River Fishery Project on the Colorado squawfish (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and bonytail chub (*Gila elegans*). The first annual report of the CRFMP has now been issued. It reports that major objectives pertain to the Colorado squawfish because the squawfish (1) has a wide distribution, (2) exhibits long movements, and (3) has very specific habitat requirements. If the requirements of the squawfish are met, the requirements of the other Endangered fish may also be met. Studies on the squawfish were limited to specific sections of the Colorado, Gunnison, Yampa, and Green Rivers. Thirty-three squawfish were implanted with radio transmitters, and one fish was implanted with an ultrasonic transmitter. A large amount of data were collected on the movements of these fish. Movements were monitored especially close during the spawning period, which resulted in a better understanding of the spawning behavior of squawfish and the location of a new spawning site in Gray Canyon on the Green River. Larval squawfish were collected in the Green, Yampa, and Colorado Rivers. Studies to determine the effect of flow fluctuation on river habitat and squawfish did not materialize as planned. This was because of high flows, along with flow release scheduling problems at Flaming Gorge Dam on the Green River. These studies will continue in 1983, and radiotelemetry studies will be initiated on humpback chubs in the Black Rocks area of the Colorado River.

The October 1981 and March 1982 issues of the BULLETIN reported the recovery of three black-footed ferret (*Mustela nigripes*) carcasses. Postmortem examinations have been completed on two carcasses. The first ferret was known to have been killed by dogs, but it has not been possible to determine cause of death of the second ferret. Chemical analyses of the stomach and intestinal contents did not reveal cause of death. The discovery of parasites previously not reported on ferrets and the development of background information on pathogenic organisms and chemical residues provides valuable information for future reference. Protocol for postmortem examinations and storage of tissue samples have been developed for ferrets so that there will be uniformity between examinations. The third carcass, a road kill, will be necropsied in the future. (See ferret feature in this issue of the BULLETIN.)

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Eureka Valley Dunes Recovery Plan Approved

The Eureka Valley Dunes Recovery Plan, approved December 13, 1982, outlines a strategy for conserving and protecting two Endangered plants, the Eureka Valley dunegrass (*Swallenia alexandrae*) and the Eureka Valley evening-primrose (*Oenothera avita* ssp. *eurekensis*). These plants are endemic to the sand dune habitat of the Eureka Valley, and are found mainly in the massive dune system known as Eureka Dunes.

Eureka Valley is located in eastern Inyo County, California, effectively isolated by the Inyo Mountains to the north and west, the Saline Range to the south, and the Last Chance Mountains to the east. Except for a few parcels of State land, Eureka Valley is virtually all Federal land managed by the Bureau of Land Management (BLM). The dunes are located in the southeast portion of the valley, just north and west of Death Valley National Monument.

The Eureka Dunes are among the tallest dune systems in the United States. In addition to the excellent visual and scenic values, the dunes and adjacent dune borders comprise an extremely rich ecological unit supporting approximately 55 species of vascular plants, including the two federally listed plants and another endemic, the shining milk-vetch (*Astragalus lentiginosus* var. *micans*). The milk-vetch is under review for listing by the Service. The dunes and bordering mountain ranges also support an abundance of animals, including bighorn sheep, desert kit fox, kangaroo mice, pocket mice, kangaroo rats and several very unusual beetles, some of which are known only from the Eureka Dunes. Archeological sites around the periphery of the dunes provide evidence that humans have visited Eureka Valley from as early as the late Pleistocene.

Background

For many years, isolation and the absence of water protected the area and its endemic species. The trip into the valley was difficult, and visitors were, at first, extremely limited. Those who came were campers wanting solitude, photographers, and persons who engaged in other types of non-vehicular recreation. During the 1960's, however, the character and intensity of human use in the valley changed rapidly. The solitude and grandeur of the valley and high dune slopes also attracted off-road vehicle (ORV) enthusiasts. As ORV use on the dunes increased, non-vehicular use was displaced. As a consequence, in the early 1970's the Eureka Dune System and its sensitive resources became the center of much public controversy that revolved around the impacts of ORVs on the biota and physical features of the dunes. Public interest and involvement eventually led BLM to conduct an environmental study of the Eureka Dunes and in 1976 to recommend the dunes be closed to ORV recreation.

Recovery of the dune vegetation was dramatic following the ORV closure and good rains of November 1976. In time, however, it became evident that the closure was not being fully observed. Although it had been respected for the most part, violations became more and more frequent. The most flagrant violations occurred over Easter weekend in 1979 when several ORV "events" were held on the dunes. Public protests following this violation compelled BLM to erect and maintain the closure signs around the dunes. On Easter weekend in 1980 the BLM presence at Eureka dunes gave a clear message that the closure was to be enforced. ORV activity since that time has been relatively minor; however, camping along the perimeter of the dunes remains a problem that adversely impacts the dunegrass and evening-primrose.

Photo by Mary DeDecker

During favorable years, the sandy dune borders are covered with the white blooms of Oenothera avita *ssp* eurekensis. *Elsewhere the plants are more scattered but fairly frequent.*

Recovery Plan

The primary objective of the Eureka Valley dunes recovery plan is to protect the existing dunegrass and evening-primrose populations from human threats and ensure that they remain vigorous and self-sustaining. The Service's plan does not call for transplantation, or sowing, or other methods of supplementing natural reproduction, but instead calls for strict control of vehicular traffic and excessive human intrusion. Also, the plan strongly emphasizes the need for adequate monitoring of the plants.

The high recreational value of the Eureka Dunes, and the southern Eureka Valley, are recognized in the plan. Consequently, recreational activities are accomodated insofar as they are compatible with maintaining the integrity of the ecosystem. The plan provides for camping away from the sensitive dune borders, slopes, and ecotones; for the

Photo by Peter G. Rowlands

The Eureka Dune System is approximately 3 miles long consisting of a massive 4 square mile triangular sand mountain 656 feet high, and a series of transverse dunes about a third as high covering 5 square miles.

establishment of a picnic/day use area at the northwest corner of the dunes; and for interpretive signs and displays. Increased law enforcement, especially during peak use times, as well as increased air patrols are an integral part of the recovery plan.

The plan presents the southern Eureka Valley as an ecological unit, and calls for the protection of its watershed and dependent biota. To protect this area it is necessary to confine or restrict all vehicular use to designated roads and trails. Activities that cause excessive erosion or significantly alter the watershed or hydrological regime within the valley should be carefully controlled. If it is not possible to minimize such impacts to insignificant levels, the activities should be prohibited.

In recent months, BLM's Ridgecrest Resource Area, (part of the California Desert District) has developed and approved "A Sikes Act Management Plan for the Eureka Valley Dunes Area of Critical Environmental Concern and the Eureka Dunes Wildlife Habitat Management Area." This plan, signed September 29, 1982, is much narrower in scope than the Service's document, including only the major dunes. Nonetheless, both plans have similar objectives and goals for the conservation of the Eureka Valley Dunes proper.

Photo by Mary DeDecker

Swallenia alexandrae *is a perennial grass, known only from the shifting sand dunes of southern Eureka Valley, California. Although considered a primitive grass species, its origins and taxonomic affinities are obscure.*

Eureka Valley dunegrass

The Eureka Valley dunegrass, discovered by Anne Alexander in 1949, is known from four populations, all in the southern Eureka Valley. The dunegrass forms large clumps on the dune slopes. The clumps enlarge and spread as sand is stabilized over and around the stems. It also grows from seedlings; these young plants were probably more vulnerable to ORV activity. The dunegrass, a coarse perennial with flowering stems 1.5 to 10 dm tall, has stiff, lance-like leaves. The leaf blades are 2.5 to 12 cm long.

Eureka Valley evening-primrose

The principal habitat of the Eureka Valley evening-primrose is the shallow sand bordering the dunes. The evening-primrose was first collected by Phillip Munz and John Roos in 1954. The fragile white flowers of the evening-primrose are best observed in the evening and early morning when they are fresh and fully open. Like the dunegrass, the evening-primrose is a perennial, well adapted to the unstable shifting sands of the dunes. It maintains itself by developing new rosettes (whorls of leaves) from the nodes of buried stems.

The Eureka Valley Dunes Recovery Plan was written under contract to the Service by Mary DeDecker of Independence, California.

For more information on the Eureka Valley Dunes Recovery Plan, contact the Portland Regional Director (see page 2 for address). Copies of this plan, and of all approved recovery plans, will be made available for purchase from the Fish and Wildlife Reference Service, Unit j, 3840 York Street, Denver, Colorado 80205-3536 (800/525-3426).

BLM photo by Peter G. Rowlands

ORV tracks photographed February 1981 at the north end of the Eureka Dunes.

New Publications

Part I of the IUCN (International Union for Conservation of Nature and Natural Resources) Mammal Red Data Book and Part I of the Amphibia-Reptilia Red Data Book are now available. Both are fully revised 1982 editions produced by the IUCN Conservation Monitoring Centre in Cambridge, England.

Part I of the Mammal Red Data Book covers 155 threatened taxa in North and South America and Australasia, including representatives for all thirteen orders (excluding Cetacea) which inhabit these regions. Part I of the Amphibia-Reptilia volume covers 83 threatened taxa in the orders Rhynchocephalia, Crocodylia and Testudines, from all zoogeographic regions. The mammal volume comprises 560 pages and the Amphibia-Reptilia volume 480 pages; both are hardback bound.

Continued on page 12

Call for Papers

A workshop on management of nongame wildlife as species and as integral components of ecological communities will be held at the University of Kentucky, Lexington, Kentucky on June 11-12, 1984. The workshop is being sponsored by the Department of Forestry, University of Kentucky, in cooperation with the Kentucky Department of Fish and Wildlife Resources, Kentucky Nature Preserves Commission, TVA Land-Between-the-Lakes, the Daniel Boone National Forest, and the Kentucky Nature Conservancy. Subject areas to be included are: 1) inventory, including listing criteria and computerized retrieval systems; 2) management of nongame species, communities, and people; 3) monitoring methods to determine management effectiveness; and (4) current and future research. Individuals who wish to present a paper in one of the above areas should submit a 250-word abstract by October 15, 1983 to: Dr. William C. McComb, Department of Forestry, University of Kentucky, Lexington, Kentucky 40546-0073. Notification of acceptance will be made by January 15, 1984. Instructions to authors regarding format and deadlines for complete manuscripts will be provided at that time. A published proceedings of all accepted papers will follow the workshop.

BOX SCORE OF LISTINGS/RECOVERY PLANS

Category	ENDANGERED U.S. Only	ENDANGERED U.S. & Foreign	ENDANGERED Foreign Only	THREATENED U.S. Only	THREATENED U.S. & Foreign	THREATENED Foreign Only	SPECIES* TOTAL	SPECIES HAVING PLANS
Mammals	15	18	223	3	0	22	281	18
Birds	52	14	144	3	0	0	213	28
Reptiles	8	6	55	8	4	0	81	6
Amphibians	5	0	8	3	0	0	16	2
Fishes	29	4	11	12	0	0	56	20
Snails	3	0	1	5	0	0	9	1
Clams	23	0	2	0	0	0	25	0
Crustaceans	2	0	0	1	0	0	3	1
Insects	7	0	0	4	2	0	13	3
Plants	55	2	0	9	1	2	69	6
TOTAL	199	44	444	48	7	24	766	85**

*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 species currently proposed: 24 animals
6 plants
Number of Critical Habitats listed: 55
Number of Recovery Teams appointed: 69
Number of Recovery Plans approved: 80
Number of Cooperative Agreements signed with States:
38 fish & wildlife
11 plants

February 28, 1983

New Publications

Continued from page 11

Further volumes in the Mammal and Amphibia-Reptilia series are in preparation as are editions covering invertebrates, birds and fish; all inquiries concerning these should be addressed to the Conservation Monitoring Centre.

Outside the Americas, books may be ordered directly from: IUCN Publications, Avenue du Mont-Blanc, 1196 Gland, Switzerland. Price per volume (including postage) payable with order: 11 pounds sterling (U.S.$22.00 surface mail) or 13 pounds sterling (U.S.$26 air mail). In the U.S.A., Canada, Latin America and the Caribbean, orders may be placed with: UNIPUB, Box 433, Murray Hill, New York, New York 10016. Price per volume (including postage) payable with order: U.S.$21.00 plus any appropriate State tax. Orders may also be placed through: IUCN Conservation Monitoring Centre, 219(c) Huntingdon Road, Cambridge CB3 ODL, England.

The Georgia "Proceedings of the Nongame and Endangered Wildlife Symposium" (August 13-14, 1981) is now available. Copies may be obtained by sending a self addressed, postage paid envelope (9 x 12) to the following address: Department of Natural Resources, Nongame/Endangered Wildlife Program, Game & Fish Division, Route 2, Box 119A, Social Circle, Georgia 30279. Postage rates: Individuals—$0.86; Libraries—$0.47.

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ENDANGERED SPECIES

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