



ENDANGERED SPECIES TECHNICAL BULLETIN

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

Service Plan Maps Whooping Crane Recovery

A popular symbol of endangered wildlife, the whooping crane (*Grus americana*) stands to benefit from a Service-approved recovery plan.

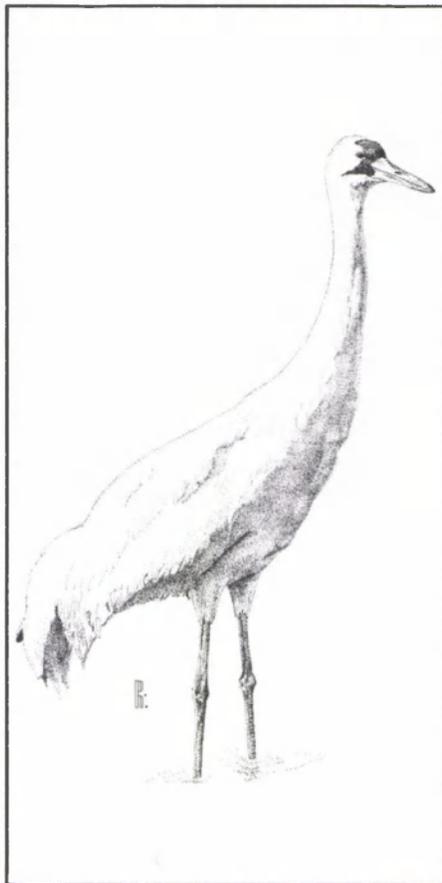
The concept of whooping crane recovery is not new to those concerned with the survival of this stately bird, the tallest in North America. Management actions by the United States and Canada, in response to increasing public concern for the crane, have resulted in a gradual increase in their numbers—from a dismal low point of only 21 birds in 1941, to 119 in both wild and captive populations.

According to the Service-appointed Whooping Crane Recovery Team, the plan's prime objective of removing the whooping crane from Endangered status could be met by (1) increasing to at least 40 nesting pairs the wild population that migrates between breeding grounds in Canada's Wood Buffalo National Park and wintering grounds at the Aransas National Wildlife Refuge in Texas and (2) establishing at least two additional, separate, and self-sustaining populations numbering at least 20 nesting pairs each.

(Current whooper populations include the wild Wood Buffalo-Aransas flock, a foster-reared wild population which migrates between Grays Lake National Wildlife Refuge in Idaho and the Rio Grande Valley in New Mexico, and captive birds at the Service's Patuxent Wildlife Research Center in Maryland, the International Crane Foundation in Baraboo, Wisconsin, and the San Antonio Zoo.)

Background

The whooping crane has never been common in recent times, with the population estimated at about 1,300 in the



mid-1800's. At the time of the establishment of the Aransas Refuge in 1937, only two small breeding populations remained—the migratory Wood Buffalo-Aransas flock and a sedentary population in southwestern Louisiana. A storm in 1940 reduced the Louisiana population beyond recovery. The last member of that population was taken into captivity in 1948.

Historically, the whooper's breeding

range (during North American settlement) extended from central Illinois, northwest through the northern half of Iowa, western half of Minnesota, northeastern corner of North Dakota, southern Manitoba and Saskatchewan, to the vicinity of Edmonton, Alberta. Whooping cranes disappeared from the heart of their breeding range in the northcentral United States by the 1890's. In 1954, an isolated breeding population was discovered in Wood Buffalo National Park—the only wild population that managed to survive.

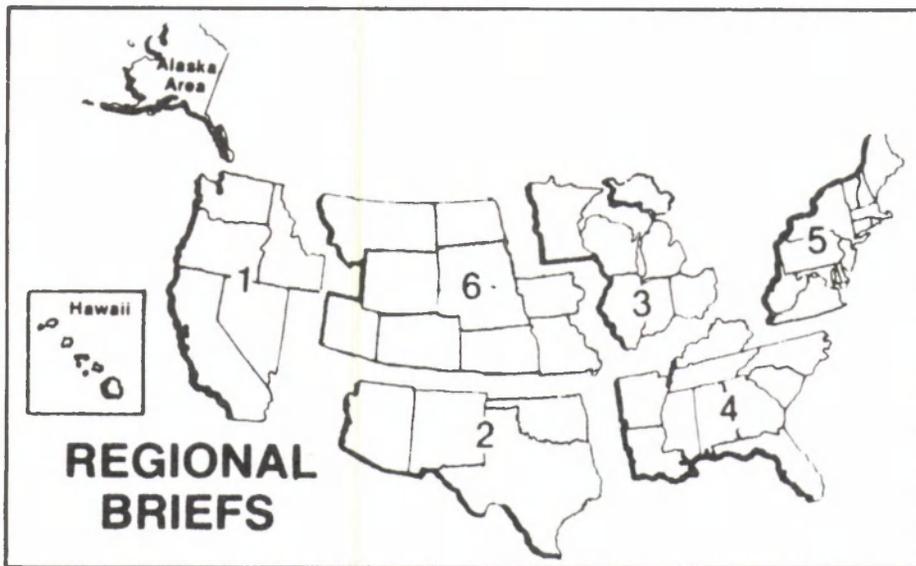
Reasons for Decline

There have been many factors associated with the species' decline. As with many other migratory birds with delayed sexual maturity (estimated at 4 to 6 years of age) and apparent life-long pair bonds, whooping cranes adhere to their ancestral breeding grounds, migratory routes, and wintering areas, leaving little likelihood for expansion.

Most significant in the species' decline are man-associated factors. The agricultural development of the Great Plains made nearly all of the whooper's original range unsuitable. Disruptive practices included draining, burning, plowing, sowing, cultivating, harvesting, and human activity associated with these operations. Although whoopers will tolerate short periods of human intrusion, they are extremely wary on the breeding grounds and will not stay near human activity.

To date, there is no evidence that pesticide contamination has adversely affected the welfare of the whooping crane. However, potential harm from environmental contamination (such as oil soils which have occurred near the

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

Region 1. The 'Ewa Plains Botanical Survey has been completed. Copies are available from the Pacific Islands Area Office, U.S. Fish and Wildlife Service, 300 Ala Moana Blvd.,

Rm. 5302, Honolulu, Hawaii 96850.

Status reports on 21 candidate Threatened and Endangered plants in Idaho were received in the regional office.

Recovery plans for the Pahrump killifish (*Empetrichthys latos*), California condor (*Gymnogyps californianus*),

and California least tern (*Sterna albifrons browni*) were submitted for the Director's approval.

Region 2. The red wolf (*Canis rufus*) and Gila trout (*Salmo gilae*) Endangered Species Reports were published and are available from the Albuquerque Regional Office.

Jack Woody met with the Departamento de Pecos in Mexico to discuss cooperative agreements for conservation programs in areas of mutual concern—specifically, sea turtles and freshwater fishes.

The first quarterly Dexter National Fish Hatchery Endangered Fishes Program review was held.

A female loggerhead sea turtle (*Caretta caretta*), radio tagged in Louisiana, is now reported near Brownsville, Texas. The turtle has logged 400 miles in 4 months.

Region 3. Regional personnel met with the Louisa Ecological Advisory committee to discuss the Illinois mud turtle (*Kinosternon flavescens spooneri*). A public meeting on the reproposal of Critical Habitat for this species was held in Springfield, Illinois.

The Regional Office hosted a meeting of plant contractors from all six States (also attended by Forest Service, Nature Conservancy, and Region 5 representatives).

Region 5. Funding for plant survey work in Delaware, Maryland, and West Virginia has been approved. This is the second round of surveys in these States, and will provide data on additional plants which should be considered for protection as Endangered or Threatened species.

Final reports for rare and endangered plants of New York, Maryland, and Pennsylvania were received.

Both Region 5 and 3 are coordinating their plant activities, cooperating in the development of survey formats, data exchange, and conservation plans.

Region 6. Public meetings were held on January 10 (on the reproposal of Critical Habitat for the Beaver Dam slope population of the desert tortoise, *Gopherus agassizii*), and on January 31 (on the Critical Habitat reproposal for the Illinois mud turtle, *Kinosternon flavescens spooneri*).

To further assess the effects of the O'Neill Irrigation Project, Interior's Water and Power Resource Service (WPRS) is sponsoring a study of the Niobrara River in northern Nebraska. Subsequent to our Service's September 1979 biological opinion indicating that reduced water flows resulting from the proposed Norden Dam would likely jeopardize the whooping crane (*Grus americana*), WPRS will study possible alternatives to dam opera-

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U.S. Fish and Wildlife Service Regions

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

The ENDANGERED SPECIES TECHNICAL BULLETIN is published monthly by the U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.

tions to maintain sandbars and associated habitat used as a stopover along the whooper's long migration to its breeding grounds in Canada. Our Service (with funding from WPRS) will also conduct bald eagle (*Haliaeetus leucocephalus*) surveys along the Niobrara to determine possible impacts.

Three Primates and Seven Cacti Considered for Transfer to Appendix I

Based on information indicating the need to further restrict trade in these species, the Service is considering proposing the transfer of two monkeys, a mandrill, and seven species of Mexican cacti from Appendix II to Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)—F.R. 1/4/80.

All of these species and one additional primate (subsequently shown to be ineligible) had been included in proposals previously presented by the United States at a Special Working Session of CITES party nations in October 1977. Although the delegates to the technical meeting endorsed the U.S. proposals, they could not be formally adopted until submitted to the Conference of the parties.

The Service is now seeking information on the status of the following plants and animals now listed under Appendix II (those species which, although not now necessarily threatened with extinction, may become so unless trade in them is strictly controlled) to determine whether to proceed with U.S. proposals to place them on the more restrictive Appendix I (those species threatened with extinction which are or may be affected by trade).

Cacti

Ariocarpus agavoides (Castaneda) E. F. Anderson. Known as the living rock cactus, Magueyitos or Chaute, this cactus is known from one area in Tamaulipas, Mexico, where it is threatened by overcollecting for horticultural purposes. Plants grown from seed may take at least five years before flowering (none are known to be grown by



Photo by Jessie Cohen

The Diana monkey, occurring only in West Africa, is one of the primates being considered for transfer to Appendix I of CITES.

any U.S. nursery), and most specimens in trade are therefore obtained from the wild.

Ariocarpus scapharostrus Bodeker. This cactus is also called the living rock cactus or Chaute. It is known from one area in Nuevo León, Mexico, and is also jeopardized by overcollecting. No source of seed-grown plants is known, making the species even more vulnerable to commercial harvest. Current information is lacking on the extent of national utilization or international trade.

Aztekium ritteri Bodeker. Known from one area in Nuevo León, the Aztec cactus population has been estimated at 2,000–3,000 individuals. Although the extent of national utilization and international trade are not known, collecting from the wild has apparently endangered this species (which is difficult to cultivate). The Endangered Species Scientific Authority (ESSA) urges inclusion of this cactus on Appendix I due to its rarity, restricted distribution, and high value in trade.

Echinocereus lindsayi Meyran. Known from one location in Baja California, Mexico, this cactus (which has no common name) has been virtually extirpated from its native habitat by American collectors. Although the extent of national utilization and international trade are not known, the species is considered in need of additional protection because of its popularity.

Obregonia denegrii Fric. This cactus is known from two valleys in Tamaulipas, Mexico. ESSA reports that it has been virtually extirpated from its type locality and is absent from other areas where it once was known to occur. Specimens in trade are usually ob-

tained from the wild, although the extent of national utilization and international trade are unknown. (A Mexican authority reports that this species is threatened by illegal harvest for American entrepreneurs.)

Pelecyphora aselliformis Ehrenberg. The "hatchet" cactus is known only from one general area in San Luis Potosi, Mexico, but may be extinct in the wild due to harvest for horticultural purposes. ESSA recommends its inclusion on Appendix I because of its rarity, restricted distribution, and vulnerability to commercial trade.

Pelecyphora strobiliiformis (Werdermann) Fric. This cactus (having no common name) is known from a few areas in Tamaulipas and Nuevo Leon. ESSA recommends the species for inclusion on Appendix I because of its rarity, restricted distribution, and high trade value. (A Mexican authority reports that overcollecting for American entrepreneurs is a major threat to the cactus.)

Primates

Cercopithecus diana (Linnaeus, 1758). Known as the Diana monkey or Diana guenon, this species occurs only in the coastal forests of West Africa from Gambia to Ghana (with unconfirmed reports of its occurrence in Cameroon and Zaire). The monkey inhabits the middle and upper levels of mature primary forest, only rarely coming to the ground from tall trees. Timber cutting is a serious threat to the species, along with hunting for food (especially in Liberia) and taking for zoological exhibition. ESSA urges its addition to Appendix I because trade

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Whooper Recovery

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Aransas Refuge) remains a threat.

Shooting took its toll on the population from 1870–1920, when more than 250 kills were recorded. The most recent loss to shooting was a single incident in 1968. The recovery plan recommends daily patrols and close management of sandhill crane and waterfowl hunting areas, where migrating whoopers may be present. Also, hunter education programs in these areas should include training for whooping crane identification.

Recovery Plan Recommendations

Among the recovery methods outlined in the Service's plan are habitat management, law enforcement, captive propagation and cross-fostering. Although the availability of nesting habitat in the Wood Buffalo Park does not appear to be limiting the whooper's expansion, the loss of wintering habitat will eventually prevent population increases. It is the opinion of the recovery team that the Aransas Refuge and nearby habitat can support at least 40 nesting pairs and associated sub-adults and birds of the year. (There are currently 76 birds in this population.) There is believed to be sufficient habitat on the remainder of the Texas coast to support several hundred whooping cranes, if they would use it.

The plan also calls for identification and protection of stopover sites along the migration route. Little is known about the consistency of site use by whoopers in migration. An important goal of the plan is to determine which areas are most often used and why.

Management practices should be applied first to areas designated as Critical Habitat or other areas of concern, according to the plan. Critical Habitat for the whooper (F.R. 5/15/78) consists of nine refuges and migratory stopover areas used by the two wild populations (See June 1978 BULLETIN). Included in the designation are Platte River bottoms between Lexington and Dehman, Nebraska, one of the principal resting and feeding areas for the whooping crane during its spring migration. It is one of the last suitable areas for whoopers to rest before the last leg of their 2,600-mile journey back to Wood Buffalo Park.

The recovery plan calls for captive propagation of whoopers to produce eggs which can be used in a cross-fostering program. Experimental efforts involving egg transfers have also shown signs of success. In a cooperative effort between our Service and the Canadian Wildlife Service (CWS), eggs

from whooping crane nests in Wood Buffalo Park and those captive-produced at Patuxent are being transferred to wild sandhill crane (*Grus canadensis*) nests at Grays Lake Refuge. Once placed in the nest, the eggs are incubated and hatched, and the whooper chicks are reared and reintroduced into the wild by their sandhill crane foster parents.

Experiments at Patuxent indicate that parent-reared birds possess wild characteristics even after several years in captivity, and may be capable of making the transition from captivity to the wild. Depending on the results from release experiments with parent-reared sandhill cranes, these parent-reared whoopers will either remain with the captive flock at Patuxent, or be released at Grays Lake to bolster that population.

At present, 15 whoopers are located in the Rio Grande Valley, the wintering grounds of the Grays Lake sandhill cranes. Results from the Grays Lake experiment will aid future transplantings designed to establish new, self-sustaining populations and insure the long-range security of the whooping crane. Our Service and the CWS plan to implement a program to establish and manage addi-

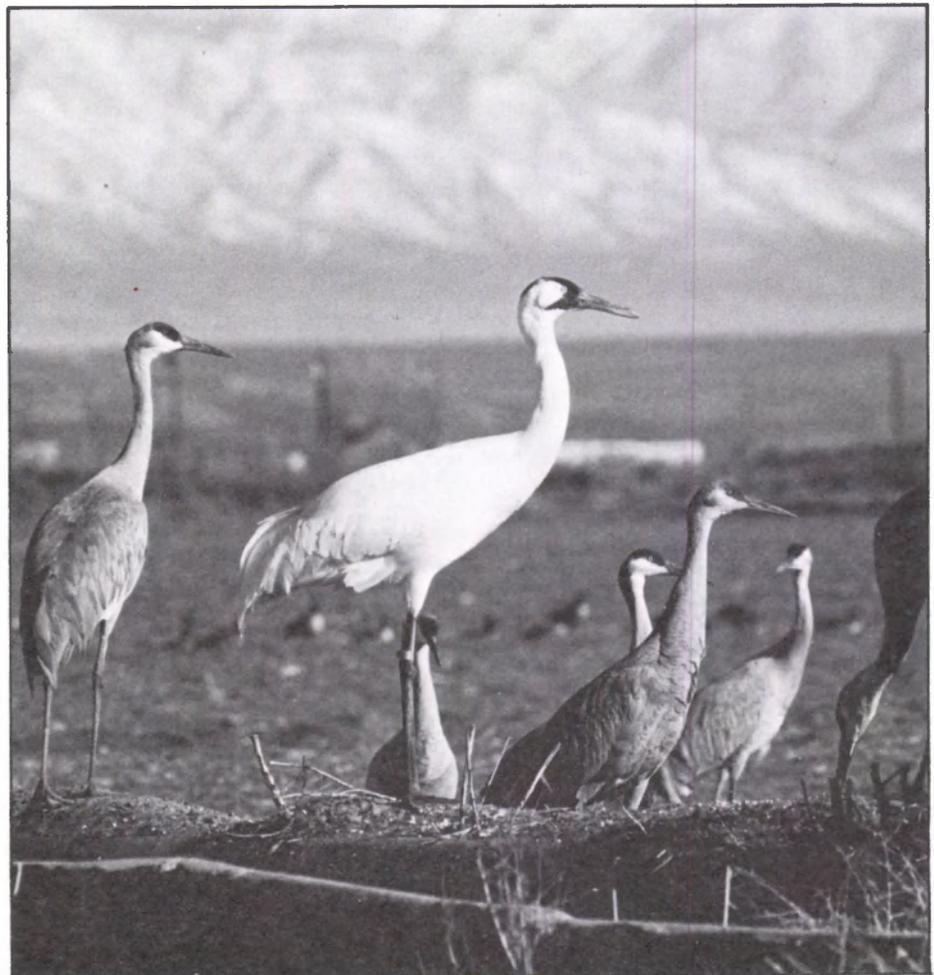
tional whooping crane populations.

Additional objectives of the recovery plan include:

- reducing mortality. Little is known about whooper mortality. The extent to which accidents, shooting, human disturbance, and the availability of food or habitat during migration affect whooping cranes is unknown. A high mortality among sub-adults exists for unidentified reasons. Finding the reasons for these losses and a method of remedial management are high priorities in the recovery plan.

- determining desired distribution. The Whooping Crane Recovery Team will examine biological and other factors and make recommendations on the most appropriate distribution of the species. Not only will they attempt to determine a desired distribution and location for individual populations, but also the ultimate continental distribution of the whooping crane in relation to the biological needs of the species.

- improving public information. Because the whooping crane will never be an abundant species, preservation and eventual recovery will require the interest and concern of an informed public.



Immature whooping crane (foreground) with Grays Lake sandhill cranes on wintering grounds in New Mexico's Rio Grande Valley.

Species Considered For Appendix I

Continued from page 3

for purposes of display represents a potentially severe threat to declining populations. (The Diana monkey is listed as Endangered under the 1973 Act.)

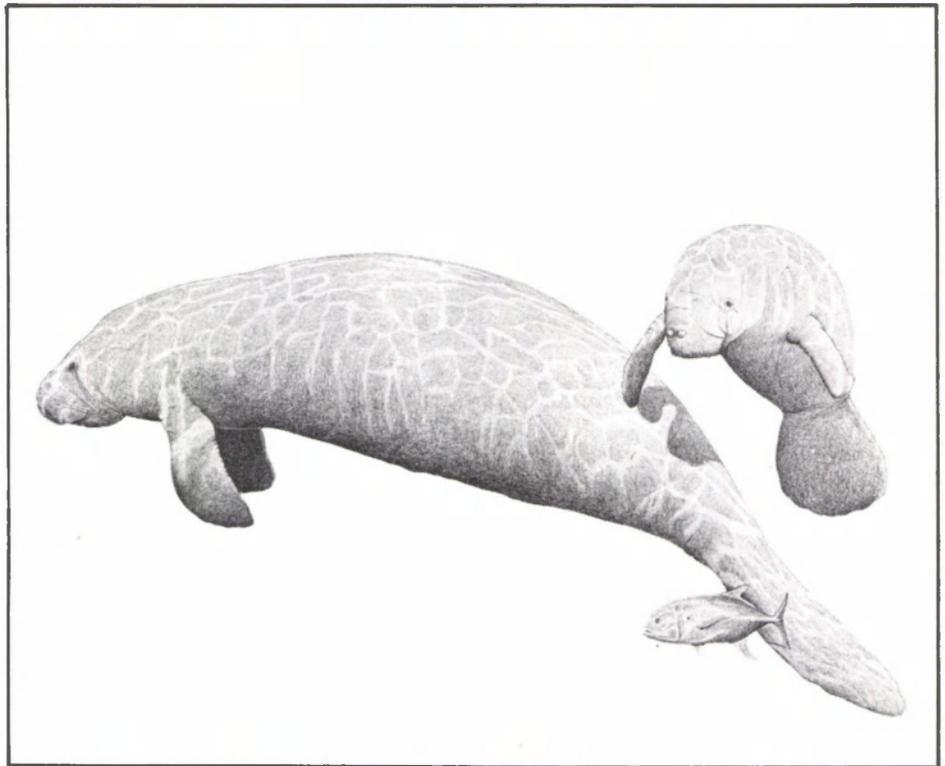
Lagothrix flavicauda (Humboldt, 1812). The yellow-tailed or "Hendee's" woolly monkey is native to portions of the Departments of Amazonas and San Martin in Peru, where it is limited to the montane rain forest. Its habitat is being cleared for agriculture, and is becoming increasingly accessible due to road construction. The species once occurred in such remote areas that only five specimens were known to scientists by 1926, and was not seen again until 1974 when an expedition found another five specimens. Locally, the monkey is hunted for food, and is exploited for use as a pet and in taxidermy. While international trade in this species is not known, ESSA notes that there has been extensive trade in Humboldt's woolly monkey (*Lagothrix lagothricha*), a closely related species, for use as a pet. Peru protects the yellow-tailed woolly monkey as an endangered species.

Papio (-Mandrillus) sphinx (Linnaeus, 1758). The mandrill occurs in a limited area of West Africa, from the Sanaga River in Cameroon to the Congo River between Congo and Zaire, and eastward to the southwestern border of the Central African Republic. Although population estimates are not available, ESSA reports that the species is declining in Cameroon and Equatorial Guinea. The species, which lives primarily in forest areas, is hunted for food and killed for raiding crops, and is traded for zoological exhibition. Extensive deforestation has also reduced habitat essential to the mandrill's survival. (The species is listed as Endangered under the 1973 Act.)

Information and Comments Solicited

Persons having any information about the above species, including their distribution, population status, national utilization, international trade, potential threats to the species from trade, protection afforded them, or information on similar species, are invited to submit data and comments to the Director, U.S. Fish and Wildlife Service, Wildlife Permit Office, Washington, D.C. 20240, through March 4, 1980.

Following a review of available information, the Service will publish a notice of its determinations indicating which species will be the subject of formal proposals to the Convention parties



Regulations to Benefit Manatees on Merritt Island, Chassahowitzka

Part of a continuing campaign to boost the recovery of Florida's Endangered sirenian, the Service has put in force new public use regulations designed to protect West Indian manatees (*Trichechus manatus*) and other protected species within the Merritt Island and Chassahowitzka National Wildlife Refuges.

An estimated 60 percent of all manatee deaths has been attributed to human-related activities, with two-thirds the result of boat-related accidents (see the January 1980, November 1979, and January 1979 BULLETINS). However, evidence has shown that, when given adequate time, manatees can move out of the path of approaching boats and avoid injury.

The Service's Merritt Island Refuge is used by a significant proportion of the declining manatee populations, according to recent surveys. The Service has therefore designated speed restrictions and closed areas within the refuge (to be enforced as soon as affected areas are properly posted) to minimize manatee mortality (F.R. 2/7/80). Under the new rules, water-related public use on Merritt Island will be permitted subject to the following restrictions:

- Boating speeds are restricted to "Idle Speed"* in Bairs Cove and KARS Marina.

- Boat speeds are restricted to "Slow Speed/Minimum Wake" ** in

Haulover Canal, KARS Marina Channel, and Banana Creek.

- An area approximating two square miles in the Banana River east of the Saturn Barge Canal and south of the NASA Parkway is closed to all public use of motorized watercraft from April 1 through November 14 annually.

- Air thrust boats are not allowed on the refuge waters.

- Life preservers must be worn by persons in crafts less than 16 feet long while boats are under power in the Indian and Banana Rivers, and Mosquito Lagoon within the refuge.

- Boat launching on the refuge between sunset and sunrise is permitted only at Beacon 42 Fish Camp and Bairs Cove.

On the Chassahowitzka Refuge, where power boat speed restrictions are designed to protect manatees as well as three species of sea turtles and other listed birds and reptiles, the main channel of the Chassahowitzka River between the east refuge boundary and the Hernando County line has been designated a "Slow Speed/Minimum Wake" ** area from May 1 through August 31 in 1980 and 1981 (F.R. 2/22/80).

* The minimum speed that will maintain the steerage way of a motorboat.

** Any through-the-water speed (not over-the-bottom speed) less than 8 m.p.h. and slow enough that the boat is neither "planing" nor moving with an elevated bow.

Feral Animal Removal Part of Settlement Involving San Clemente Island

Following a suit filed last year against the U.S. Government by Fund for Animals *et al*, the U.S. District Court for the Central District of California has ruled on a settlement of parties, thereby enjoining the aerial shooting of goats, pigs, and deer that have been trampling and/or eating some of San Clemente Island's rarest animal and plant life.

One of the Channel Islands off the coast of southern California, San Clemente Island has been termed the most biologically distinctive coastal island owned by the United States. In past years, this unique habitat—supporting many species and subspecies that do not occur anywhere else—has been severely modified primarily due to the introduction of feral animals (as well as exotic plants). On August 11, 1977, the Service placed four plants, two birds, and a lizard (all indigenous to the island) on the list as Endangered or Threatened species in an effort to prevent further declines. (More than a dozen additional plant species are candidates for Federal protection on San Clemente.)

During recent years, the Navy has removed—through sport hunting, trapping, herding, and fencing—nearly 16,500 goats, 600 pigs, and 150 black-tailed deer from the island. Public outcry (culminating in the subject suit) abruptly halted the operation, however, and the surviving populations have since multiplied.

In a May 1979 biological opinion, the Fish and Wildlife Service stated that a comprehensive exotic animal and plant removal plan proposed by the Navy (involving aerial and ground shooting of all feral goats and deer, as well as the use of foot snares to capture pigs) would "contribute to the conservation of listed plant and animal species and the overall island ecosystem." According to the Service, "the complete removal of the last remaining individuals is of critical importance to the success of this eradication program, as population growth can increase rapidly and exponentially in response to release

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Rulemaking Actions

January 1980

Proposals Withdrawn for Toad and Nine Fishes

Subsequent to its December 10, 1979, notice (see the January 1980 BULLETIN), the Service has announced the withdrawal of three additional proposals to list and designate Critical Habitat for nine fishes and one species of toad (F.R. 1/24/80).

Under 1978 amendments to the Endangered Species Act, proposed listings not finalized within two years of publication in the *Federal Register* must be withdrawn. However, the amended legislation authorized a suspension of all withdrawals (after enactment), or until November 10, 1979.

Expired proposal affected by this notice include:

Proposed Threatened status and Critical Habitat for the black toad *Bufo exsul* (F.R. 3/11/77)

Proposed Endangered status and Critical Habitat for the Cahaba shiner, *Notropis* sp., goldline darter, *Percina aurolineata*, spring pygmy sunfish, *Elassoma* sp., and pygmy sculpin, *Cottus pygmaeus* (F.R. 11/29/77)

Proposed Endangered status and Critical Habitat for the Waccamaw darter, *Etheostoma perlongum*, Waccamaw silverside, *Menidia extensa*, Waccamaw killifish, *Fundulus waccamensis*, Barrens topminnow, *Fundulus* sp., Ouachita madtom, *Noturus lachneri* (F.R. 12/30/77)

Affected States include Alabama, Arkansas, California, Georgia, North Carolina, and Tennessee.

Public Hearing on Critical Habitat For the Desert Tortoise

In the interest of insuring full public participation on the reproposal of Critical Habitat for the Beaver Dam slope population of the Desert tortoise (*Gopherus agassizii*), the Service will be scheduling a public hearing and reopening the public comment period.

Requests for a public hearing (as allowed under 1979 amendments to the Endangered Species Act) were received prior to and during the January 10 public meeting on the Service's Critical Habitat reproposal (F.R. 12/7/79).

We regret that details on the location and time of the hearing were unavailable as this BULLETIN went to press. For further information on the hearing and extended comment period, please contact Mr. Bill White in the Service's Salt Lake City area office (801/524-5634).

—State Reports

Michigan Plants in Danger Exhibit on Tour

The University of Michigan Matthaei Botanical Gardens, funded by the Michigan Council for the Arts and several conservation organizations, has recently produced a traveling exhibit entitled "Michigan Plants in Danger." The exhibit explains problems affecting Michigan's 16 endangered, and 192 threatened, species—now legally protected.

Through a series of comparative photographs and narratives, the exhibit attempts to familiarize the audience with the concepts of plant endangerment and conservation. Five reasons why a plant may become rare, threatened, or endangered are addressed: habitat destruction, exploitation by man, habitat restriction, distribution patterns, and devastation by introduced and natural enemies. The concluding section provides suggestions on how concerned citizens may take action to protect plant species that are in danger. These include reestablishment of selected species, membership in botanically-oriented groups, and support of appropriate legislation. (A color brochure also accompanies the exhibit.)

For most of the first year, the exhibit will be scheduled for month-long visits to larger Michigan nature centers and shown at statewide special events. Eventually it should be available to any interested Michigan group. (The Matthaei Botanical Gardens staff hopes that all States may have the opportunity to develop similar displays. They have learned a great deal about production options and are glad to pass on their knowledge to other botanical conservationists.)



"Michigan's Plants in Danger" exhibit in lobby of Matthaei Botanical Gardens, University of Michigan.

Eagle Day Interpretive Programs a Success in Missouri

During the last two winters the Missouri Department of Conservation has offered a series of special "Eagle Day" Interpretive Programs at various locations across the state.

"Bald eagles are an ideal subject for programs like this," Larry Gale, Director of the Department says. "They have predictable wintering habits, so they're easy for people to see, while naturalists can inform people about endangered species philosophy, pesticide pollution, habitat destruction, and the role of predators like eagles in the environment."

The programs have been tremendously popular with Missouri's public. The first year nearly 1100 people attended Eagle Days even though several were cancelled or postponed due to winter storms.

The Department handed out a participant survey at Eagle Days to get a handle on just who came and what they got out of it. Results of the survey showed broad-based support for this type of program. All kinds of people came—hunters made up 32% of the participants and fishermen 67%. That's over twice what would have been expected from a straight cross-section of the Missouri population. In addition, 17% of the participants classified themselves as birders, 61% classified themselves as occasional bird watchers and 26% said they belonged to one or more wildlife interest groups. It was particularly interesting to note that 5% indicated no previous interest in wildlife at all, and over half of the participants had never before seen an eagle.

The eagles themselves were more

or less oblivious to the people. Naturalists were able to show participants many aspects of eagle behavior such as fishing, feeding on injured waterfowl, and aggressive interactions.

Eagle Days have proven so successful, the Department is putting several similar programs on the planning table. "This kind of program has proven itself beneficial above and beyond the participants themselves through the media and word-of-mouth support they have generated for the Department and its programs," Gale said.



Paul Price of Dickerson Park Zoo, Springfield, Missouri, with "Omega," a rehabilitated female bald eagle exhibited during Missouri Department of Conservation "Eagle Days."

New York Fish Surveys

New York's Department of Environmental Conservation has tentatively identified 56 species of fish that are "of special concern" according to available records.

Under the direction of Dean Bouton, the Department's endangered fish program has contracted two major survey efforts (through Fiscal 1981) to determine if listing is warranted for any of the State's declining fishes.

(Although believed extinct, the blue pike (*Stizostedion vitreum glaucum*) and longjaw cisco (*Coregonus alpenae*)—which occurred in Lake Erie and Ontario—remain protected in New York. The Endangered shortnose sturgeon (*Acipenser brevirostrum*), a marine species occurring along the Atlantic Coast, has been the subject of recent power plant impact studies in the State.)

Feral Animal Removal

Continued from page 6

from inter- and intra-specific competition." (The Service opinion further stressed the importance of a rigorous exotic plant removal program to complement feral animal removal, thereby boosting the recovery of native fauna and flora.)

Under the January 23 order, 60 percent of all feral animals are to be counted and line-trapped within a 90-day period (with the remainder taken within one year) and removed from the island by barge. The order further calls for the preparation of an Environmental Impact Assessment by the U.S. Navy on the effects of its military operations on all forms of plant and animal life, archeological ruins, and Indian burial sites on the island.

The Navy is expected to reinstate consultation on its new plan in the near future.

BOX SCORE OF SPECIES LISTINGS

Category	Number of Endangered Species			Number of Threatened Species		
	U.S.	Foreign	Total	U.S.	Foreign	Total
Mammals	35	251	286	3	21	24
Birds	67	145	212	3		3
Reptiles	11	50	61	10		10
Amphibians	5	9	14	2		2
Fishes	29	11	40	12		12
Snails	2	1	3	5		5
Clams	23	2	25			
Crustaceans	1		1			
Insects	6		6	2		2
Plants	49		49	7	2	9
Total	228	469	697	44	23	67

Number of species currently proposed: 35 animals (no plants)

Number of Critical Habitats listed: 35

Number of Recovery Teams appointed: 66

Number of Recovery Plans approved: 31

Number of Cooperative Agreements signed with States:
34 (fish & wildlife)
3 (plants)

January 31, 1980

New Publications

Proceedings of the First South Carolina Endangered Species Symposium is the first attempt to list and describe the status of threatened and endangered plants and animals in the State. This 200 page book is based on a 1976 symposium held in Charleston. Copies are available from the Nongame-Endangered Species Section, South Carolina Wildlife and Marine Resources Department, P.O. Box 167, Co-

lumbia, South Carolina 29202, for \$6.50 plus \$.50 for handling.

The January 1980 issue of *Rhodora* contains the proceedings of the symposium, "Rare and Endangered Plant Species in New England," which was sponsored by The New England Botanical Club. Order from NEBC Symposium, Department of Botany and Plant Pathology, Newsmith Hall, University of New Hampshire, Durham, New Hampshire 03824. Make checks payable to NEBC symposium. The price is \$8.00.

Correction— Bobcat Exports

In the December 1979 BULLETIN, we inadvertently listed South Dakota as one of the States from which exports of bobcat pelts taken during the 1979-80 season had been halted under a December 12 U.S. District Court order. Such exports from South Dakota are allowable under the terms of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).



ENDANGERED SPECIES TECHNICAL BULLETIN

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

February 1980, Vol. V, No. 2