

ENDANGERED SPECIES

Technical Bulletin

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

The Farm Bill (Food Security Act) and Endangered Species

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The Food Security Act of 1985, popularly known as the Farm Bill, was passed to help reverse the declining economic environment on the American farm. As part of this legislation, Congress recognized a need to more effectively manage the physical environment upon which American farmers depend. Several conservation provisions were included in the Farm Bill that, in addition to providing a better long-term economic base for America's farmers, present an unparalleled opportunity to conserve and restore millions of acres of wetlands and other habitat for migratory birds, anadromous fish, and species that are federally listed as Endangered or Threatened (or proposed for listing). One of the principal conservation goals of the Farm Bill is to reverse the loss of wetlands in the United States. Only 45 percent of our Nation's original wetlands remain and a large majority of converted wetlands (greater than 80 percent) have been lost due to agricultural activities.

The Service is playing a major role in realizing wildlife conservation benefits associated with the Farm Bill. The Service's principal responsibility is to support and assist the U.S. Department of Agriculture in implementing the conservation provisions of this act. There are five major provisions that provide opportunities to conserve, restore, and enhance wildlife habitats, including those of Endangered and Threatened species. These provisions are known as "Swampbuster," "Sodbuster," the Conservation Reserve Program, Section 1318 conservation set-aside easements, and Section 1314 conservation easements. The principal opportunities for Endangered and Threatened species under the Farm Bill are in recovery (e.g., restoration of habitat) and habitat protection (e.g., protection of existing habitats).

Swampbuster

Swampbuster is a special wetland conservation provision that discourages the

conversion of wetlands to agricultural production. Under Swampbuster, any person who produces an agricultural commodity on wetlands that are converted after December 23, 1985, becomes ineligible for most Federal agricultural subsidies. The restriction applies to the year such production occurs and to all lands, including non-wetland, under control of that person. The Service's principal responsibility in this area is to provide technical support (e.g., providing updated lists of plants that occur on wetlands and assisting in wetland determinations) to the Soil Conservation Service and the Agricultural Stabilization and Conservation Service. This provision of the Farm Bill should have a positive effect on proposed and listed species that depend upon wetlands. For example, the whooping crane (*Grus americana*) requires wetlands for overnight resting and foraging along its entire migration route, including wetlands on private lands. Therefore, Swampbuster should help to conserve vital whooping crane habitat on private lands.

Sodbuster

Sodbuster is a provision of the Farm Bill that reduces erosion and the loss of top-

soil from agricultural lands by reducing the conversion of highly erodible lands to agricultural production. Under this provision, any person who produces an agricultural commodity on highly erodible lands (as determined by the Soil Conservation Service) after December 23, 1985, becomes ineligible for most agricultural subsidies, unless they farm such lands under a Conservation Plan that has been approved by the local Soil Conservation Service Soil and Water Conservation District or by the Secretary of Agriculture. This provision will affect approximately 227 million acres of highly erodible rangeland, pasture, and forest. Although the Service does not participate directly in Sodbuster, this program should help improve the quality of streams and rivers by reducing silt loads, especially in watersheds with farms. Many Endangered and Threatened species would benefit from reduced silt loads in streams and rivers (e.g., clams, fish).

Conservation Reserve

The Farm Bill's Conservation Reserve Program provides an opportunity for farmers to enter into a 10-year contract
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Progressive land use practices can allow agriculture and wetland wildlife to coexist in the prairie pothole region and elsewhere.



Regional News

Endangered species regional staff members have reported the following recent activities:

Region 2 — Under contract with the Fish and Wildlife Service, Dr. Barbara Phillips and Dr. Art Phillips of the Museum

of Northern Arizona established four monitoring plots through the range of the Peebles Navajo cactus (*Pediocactus peeblesianus* var. *peeblesianus*), an Arizona plant listed in 1979 as Endangered. Data collected in 1987 indicate that sig-

nificant seedling germination occurred from mid-August through mid-October, when approximately 100 seedlings were discovered during an intensive inventory.

Seedlings 2 millimeters in diameter and 3 mm tall are beet red with many spines on top. Within a month, the seedlings turn green as they develop their chlorophyll, and they double their height while maintaining their original diameters. Most of the seedlings are found within 2 centimeters of the parent plant; however, a few have been found as far as 1.5 meters away.

Prior to this field season, it was believed that Peebles Navajo cacti germinated in the spring following winter stratification. The plants flower in late April, with seeds ripening and falling to the ground in June. However, this is the height of the arid foreshummer in Arizona, when soil temperatures reach 110° F for 8 hours per day and there is no moisture for the seeds to absorb. Summer rains usually arrive in July and ameliorate the hot soil temperatures, providing favorable environmental conditions for germination.

Museum of Northern Arizona personnel will monitor the plots again in April 1988 and check for seedling survival. It has been observed that *Pediocacti* are very sensitive to rot, and it is expected that a fair proportion of seedlings will not survive the winter snows that cover them for fairly long periods. The data gathered during these studies will be extremely useful in planning for the reintroduction and recovery of the Peebles Navajo cactus.

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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, 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. **Region 8** Research and Development nationwide.

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The New Mexico ramshorn snail (*Pecosorbis kansasensis*) was originally described as a Pliocene fossil from Kansas. Discovery by Dwight W. Taylor of live populations in the Pecos River Valley in New Mexico prompted the State to add the New Mexico ramshorn to its own endangered species list and the Service to place it in Category 2 of the notice of review of invertebrate candidates for Federal listing. A status survey of the species was jointly funded by the Service, the U.S. Forest Service, the New Mexico Department of Game and Fish, and the Bureau of Land Management. A final report of this survey by Richard A. Smartt and Artie L. Metcalf indicates that the New Mexico ramshorn was found alive at 48 of the 123 localities examined. The positive localities were distributed across seven New Mexico counties. Accordingly, New Mexico has removed this species from the State endangered list, and the Service is placing it in Category 3C of its invertebrate notice to reflect that it is no longer being considered for listing. Although the New Mexico ramshorn is more widespread and abundant than formerly believed, it remains of historical and geological significance because its fossil distribution is much greater than that of living populations.

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Manatee Research Efforts Under Way on Florida's East Coast

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The West Indian manatee (*Trichechus manatus*), a member of the mammalian order Sirenia, reaches its northern range limits in the southeastern United States. This aquatic mammal occurs elsewhere in the Caribbean, Central America, and northern South America, but its range outside of the United States has become fragmented and populations have been reduced by hunting of the animal for its meat. The manatee is listed throughout its range as Endangered.

Florida harbors the only significant year-round population of manatees in the United States, and the Florida subspecies (*T. m. latirostris*) is considered distinct. The current distribution of the Florida manatee is similar to that in the past. A physiological inability to persist outside of warm tropical or subtropical waters sets the distribution limits for this unique aquatic herbivore. Even in Florida, most manatees must seek out sources of warm water during winter, and significant aggregations occur at discharge sites for heated power-plant effluents and at natural warm-water springs like the Crystal River on Florida's Gulf Coast. At least 1,200 manatees have been accounted for at wintering areas in Florida.

The major problems faced by manatees in Florida are increasing mortality due to accidental collisions with boats and accelerating modification of habitat by development. The annual number of boat-killed manatees recovered during carcass salvage operations has doubled in the past 3 years. Prodigious human population growth in Florida has resulted in an increase in the number of boats registered in those counties where people share waters with manatees, rising from about 300,000 a decade ago to nearly 450,000 today. Florida is now the fastest growing State, with hundreds of new residents moving in every day. New housing developments and boating facilities in manatee habitat result in an increasing number of accidental manatee deaths. The U.S. Fish and Wildlife Service, Army Corps of Engineers, and State agencies must grapple with decisions on how permits related to such development might affect manatees, all too often with an insufficient data base. This problem has become increasingly critical in eastern Florida.

Until recently, the most intensive field research efforts on manatee biology and habitat requirements had focused on the Gulf Coast. The population that winters at Crystal River was monitored in detail

through aerial surveys and recognition of individual animals based on boat propeller scar patterns. The latter technique also provided the first information on manatee reproductive traits through long-term field studies, which emphasize resighting known females every winter. Manatees give birth to one offspring every 2 to 3 years (although some females breed less frequently), and females typically do not successfully raise calves until they are 5 to 8 years old. These reproductive traits suggest that the species has a low potential rate of population increase, which makes the population more susceptible to decline from an increasing number of boat-kills. On the positive side, research at Crystal River has led to intensified recovery efforts in that region, and increased protection and management are at least partially responsible for a noteworthy increase in the Crystal River winter population size, from about 50 manatees 20 years ago to over 200 today.

Development of radio-telemetry techniques for manatees also took place in the Crystal River region. The major obstacle in using telemetry on manatees was the salt water barrier to radio-signal transmission. A newly-developed floating transmitter connected by a stiff tether to a belt attached around the narrow peduncle above the manatee's tail, allowing the signal to be broadcast in the air, was developed by Sirenia Project researchers working at Crystal River. Telemetry and aerial surveys in the Crystal River region have better defined summer habitat, which has subsequently come under increased protection. Aerial surveys and telemetry techniques were later applied to manatees in the lower Caloosahatchee River on the Gulf Coast in southwestern

Captive California Condors Produce Their First Egg

The first fertile egg ever produced by a captive pair of the critically endangered California condor (*Gymnogyps californianus*) was laid March 3 at the San Diego Wild Animal Park. In accordance with scheduled protocols, the egg was removed and placed in an incubator, where biologists hope it will hatch between April 28 and May 3.

Taking the egg away at an early point may lead the pair to lay another egg this year, possibly around the first week in April; indeed, the pair resumed mating activity the next day. The male bird, at 7 years of age, is in his first breeding season. His mate was first observed in the wild as an adult, so her age is unknown.

Condors in the wild have shown the ability to produce up to three eggs in a season to replace ones that are lost. By inducing multiple clutches, biologists may hasten the day when the captive breeding population is large enough to furnish young condors for release into the wild.

Florida, where over 300 have been counted at a power plant effluent discharge site near Fort Myers. This work is ongoing, and is providing a growing data base for management decisions in this region.

Work in eastern Florida has lagged behind that on the Gulf Coast because of limited resources. This is unfortunate

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West Indian manatee and calf

photo by Galen Rathbun

Manatee

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because development is growing in eastern Florida, and earlier in the research and recovery program it was recognized that the number of boat-killed manatees was much higher in the east than on the Gulf Coast despite an approximately equal number of animals. In the past 2 to 3 years, however, the effort in eastern Florida has expanded due to a cooperative effort involving researchers from the National Ecology Research Center's Sirenia Project (Fish and Wildlife Service); the Marine Research Laboratory (Florida Department of Natural Resources); and the Beaufort Laboratory (National Marine Fisheries Service.) Significant involvement and support to the program also have been provided by the Marine Mammal Commission, U.S. Army Corps of Engineers, Florida Power and Light Company, Florida Audubon Society, Eckerd College, Bionetics Corporation, the Fish and Wildlife Service's Jacksonville Field Office, and the Hobe Sound and Merritt Island National Wildlife Refuges.

Current research involves telemetry (including the highly successful use of satellite-monitored transmitters), aerial surveys, expanded monitoring of individuals at winter aggregations through use of scar patterns, food habits analysis, and determination of the effects of increased boat traffic on the seagrass used by manatees as a food base.

The retrieval and necropsy of manatee carcasses in eastern Florida by the State and its cooperators have remained a significant part of the effort.

Data on local habitat use are quickly made available to managers who must meet deadlines on permit decisions under the Section 7 interagency consultation requirements of the Endangered Species Act. Over a longer term, the steady accumulation of information on basic biology will provide the key to the integrated approach that is necessary for manatee recovery in eastern Florida.

Initial research results show that some movement and seasonal habitat use patterns in eastern Florida are radically different from those on the Gulf Coast. Movements are much more extensive, and seasonal migrations of 530 miles (850 kilometers) have been documented. Telemetry has shown, however, that extensive movements also occur within seasons. In summer, some individuals have spent considerable time in southern Georgia or in the vicinity of Merritt Island National Wildlife Refuge on the central Atlantic coast of Florida, frequently switching between these areas but using little of the intervening 155 miles (250 km) of coastal waterways. Manatees seem to find and favor quiet areas, and some large bodies of water where boats are prohibited, such as the Kennedy Space



photo by Robert Bonde

After netting this manatee, biologists with the Fish and Wildlife Service's Sirenia Project quickly attached a radio transmitter so that the animal's movements can be tracked.

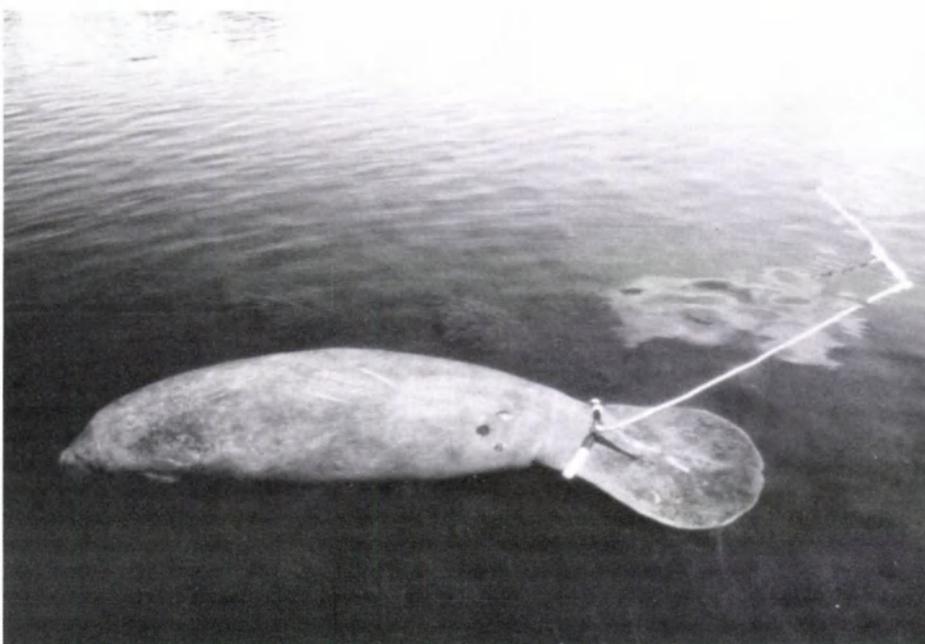


photo by James Reid

Signals from the radio transmitter trailed by this manatee are tracked by satellite.

Center on the Merritt Island National Wildlife Refuge, show increasing use by manatees as outside waters show increasing use by boats. In winter, research is beginning to reveal the locations of important feeding areas for the manatees that use power plant warm-water effluents. Manatees are versatile in their food habits, and in summer the same individuals can feed in regions where the predominant items are marine seagrasses or in different areas where saltmarsh grasses at high tide are the only available forage. Preliminary findings, however, suggest that turbidity caused by boat wakes may limit seagrass abundance in manatee feeding areas.

Although the eastern Florida research program has only recently expanded and the results are preliminary, some encouragement can be found in the initial findings. Certain areas needing better protection are being revealed, and manatees are clearly showing that they will find and use sanctuaries if provided. Areas where boat traffic is reduced or slowed could provide increased safety from collisions and could promote the growth of underwater vegetation. Intensive work will be needed over the next several years to shed more light on these possibilities and thereby secure a future for the manatee along Florida's east coast.

Farm Bill

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with the Department of Agriculture. Under this contract, the farmer takes specified highly erodible land out of annual crop production and receives annual rental payments for applying soil conservation procedures and prescriptions, such as the planting and maintenance of trees for wildlife. The farmer also receives Federal cost-sharing benefits to help defray the expense of establishing permanent vegetative cover on his land. Currently, there are 23 million acres of land signed up for the Conservation Reserve Program in 44 States. Of this total, 1.5 million acres of trees and over 6 million acres of native grasses are to be planted. The Service's role in this program is to provide technical expertise and assistance to the Department of Agriculture in developing cover types beneficial to wildlife. Currently, it is unknown how many proposed and listed species will benefit from the Conservation Reserve Program, although there should be opportunities to restore or enhance habitats of these species on Conservation Reserve lands.

Conservation Set-aside (Section 1318)

One of the two other major conservation provisions that involve working with the Farmers Home Administration, the farm debt restructure and conservation set-aside provision (Section 1318), allows the Secretary of Agriculture to grant partial debt relief to a current borrower (farmer) in exchange for a not-less-than 50-year conservation easement on selected lands held by the borrower. This provision is intended to help borrowers in debt to the Farmers Home Administration regain a positive cash flow by allowing them to place selected lands in a conservation easement status while continuing to farm more productive lands. A number of habitat conservation and enhancement easements can be adopted through this provision of the Farm Bill. Currently, no debt restructure easements have been adopted, and a final rule to implement this provision has not yet been published. The Service will, based on the law, serve as a technical consultant to the Farmers Home Administration in recommending and enforcing a wide range of Section 1318 conservation easements. This provision may provide some benefits for the recovery of listed species. On sites with listed species, it might be possible to include measures that will secure or enhance existing habitat. In addition, on lands adjacent to areas with listed species, it may be possible to include measures that would restore listed species' former habitat. In this manner, the range of certain listed species could be expanded.



photo by E. LaVerne Smith

Bushy Lake

State and Federal agencies are cooperating under the Farm Bill to protect and restore wetlands at the Bushy Lake State Natural Area in eastern North Carolina. This site is considered one of the Nation's best remaining pocosin-dominated Carolina bays. Concentrated on the coastal plain of the Carolinas and Georgia, the Carolina bays are oval wetland depressions of mysterious origin with a sand, peat, or clay substrate. They are the strongholds of pocosin vegetation, an unusual, shrub-dominated plant community found only in the southeastern U.S. Among the species associated with Carolina bays are carnivorous plants and other rare flora. At least one plant listed federally as Endangered, the roughleaf loosestrife (*Lysimachia asperulaefolia*), occurs at Bushy Lake.

In recent years, most areas in which Carolina bays occur have experienced widespread drainage and conversion of their wetlands for such uses as agriculture and tree farming. At Bushy Lake, private land was partially cleared and a large drainage ditch was dug. When the farm later went bankrupt, the foreclosed property transferred to the Farmers Home Administration. Although the farming attempt was abandoned, the ditch continued to drain water from the bay. Recognizing the opportunities opened by the Farm Bill, the North Carolina Natural Heritage Program worked with Federal and State agencies, along with the North Carolina Nature Conservancy, to develop a habitat restoration plan. In August 1987, the Fish and Wildlife Service assembled personnel and equipment from several national wildlife refuges to construct a 200-foot-long earthen plug that has effectively stopped the drainage and is restoring water levels in the wetlands. Also, the North Carolina Division of Parks and Recreation has joined the Service in asking the Farmers Home Administration to apply stringent deed restrictions on the foreclosed property and to grant a conservation easement for protection of the adjacent 1,200-acre Bushy Lake State Natural Area.

—information provided courtesy of the North Carolina Natural Heritage Program

Conservation Easements (Section 1314)

Another conservation easement provision of the Farm Bill, Section 1314, addresses lands acquired by the Farmers Home Administration from farm foreclosures and voluntary conveyance (inventory lands). This section allows the Secretary of Agriculture to grant or sell easements, restrictions, development rights, or the equivalent thereof to a local or State government or a private non-profit organization for conservation purposes. These actions would precede resale of Farmers Home Administration inventory lands. Federal agencies cannot be assigned enforcement or management

responsibilities under this provision of the Farm Bill (but see below relative to the Wetlands Executive Order). Currently, very few conservation easements under this provision of the Farm Bill have been adopted. Potential benefits to listed species under this provision would be similar to those under Section 1318 conservation easements.

Related Conservation Opportunities

Three other legislative authorities are related to, and enhance, the Service's opportunities under the Farm Bill. The Service and Farmers Home Administra-

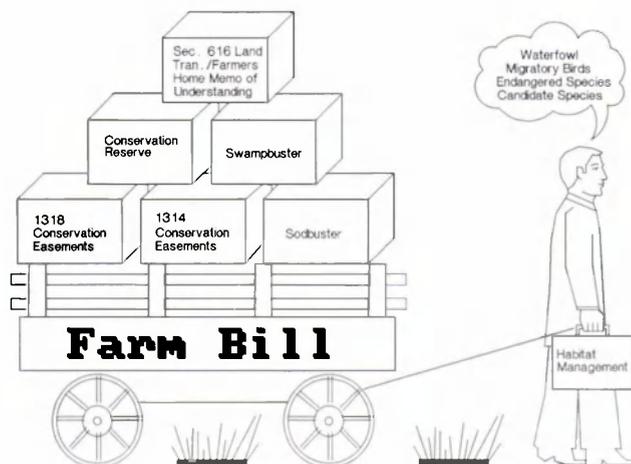
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tion have signed a Memorandum of Understanding that will provide significant opportunities to protect and restore wetlands, principally through the Executive Orders on the Protection of Wetlands (E.O. 11990) and Floodplain Management (E.O. 11988). The Farmers Home Administration has concluded that it has an affirmative responsibility to protect and enhance wetlands and floodplains in conjunction with its property (inventory lands) disposal process. Consequently, the Service has been given an opportunity to recommend deed restrictions on inventory lands prior to resale. Unlike the case with conservation easements under Section 1314, the Service or a State agency may be the enforcement authority on these deed restrictions. In addition to recommending deed restrictions to protect, enhance, or restore wetland values, the Farmers Home Administration has given the Service an opportunity to recommend and enforce deed restrictions to protect or enhance other high priority resources, such as listed, proposed, and candidate



FWS photo

Crop production in and immediately adjacent to wetlands increases silt loads and destroys cover. Providing a small buffer zone around this wetland could enhance wildlife values without significant inconvenience to farm operations.



species. The deed restrictions may even be enforced under provisions of the National Wildlife Refuge System Administration Act.

There are currently 1.7 million acres of inventory lands, and the Service is gearing up its field offices to provide the Farmers Home Administration with recommendations for deed restrictions on a large number of inventory lands throughout the country. When listed species occur on inventory lands, the Service will recommend deed restrictions to protect and enhance these species' habitats. The Service also will recommend deed restrictions on inventory lands with habitats that have a potential for recovery of listed species, even though the species may not currently occupy the inventory land. This program should assist in the recovery of certain listed species, especially those that have declined because of agricultural development.

Finally, Section 616 of the Agricultural Credit Act of 1987 provides an opportunity

for the Service to secure, at no cost, Farmers Home Administration inventory lands if the Secretary of Agriculture determines that the property is suitable or surplus and: (1) has marginal value for agricultural production; (2) is environmentally sensitive; or (3) has special management importance. Although the Farmers Home Administration has not yet promulgated implementing regulations, this legislation should provide a mechanism

whereby the Service can secure and bring into its management system inventory lands with important wildlife values, including those lands with listed species.

The Farm Bill and related legislation and programs (e.g., the Memorandum of Understanding between the Service and Farmers Home Administration) discussed in this article should help the Service's efforts to secure and enhance habitat of listed, proposed, and candidate species. However, these programs are not intended to supersede, or substitute for, the Endangered Species Act. All provisions of the Endangered Species Act will continue to apply to all Federal activities, including those of the Department of Agriculture. However, the Service believes that the Farm Bill and associated legislation and programs will be valuable tools in protecting and recovering certain listed species, especially in areas with small amounts of public land.

Questions or comments on the Service's role concerning various aspects of the Farm Bill and associated programs should be directed to the following Regional Farm Bill Coordinators:

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Region 1	Dennis Peters	(503)-231-6154
Region 2	Warren Hagenbuck	(505)-766-2174
Region 3	Bob Lange	(612)-725-3570
Region 4	Ronnie Haynes	(404)-331-6343
Region 5	Dick Dyer	(617)-965-5100
Region 6	Ralph Fries	(303)-236-8148
Region 7	Stephen Wilson	(907)-786-3467
National Coordinator	David Smith	(703)-235-2760

For the address of each Regional Office, see the insert on page 2 of the BULLETIN.

The Vaquita: Can It Survive?

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The vaquita (Spanish for "little cow"), or Gulf of California harbor porpoise (*Phocoena sinus*), has the most limited range of any marine cetacean and is probably the rarest. It has been caught incidentally in gill nets set commercially for totoaba (*Totoaba macdonaldi*), large fish that were over-exploited in the upper Gulf of California until they, too, were endangered. In 1975, the Mexican Government announced a total indefinite closure on fishing for totoaba. Between the time this porpoise was described as new to science (1958) and its listing by the U.S. Fish and Wildlife Service as Endangered (early 1985), the vaquita was known from only 26 confirmed records (partial remains found on beaches) and a few sightings of live animals. (Note: the vernacular name "cochito" was cited when this animal was listed, but biologists have since learned that "vaquita" is the term used by most local fishermen.) The *Endangered Species Technical Bulletin* story about its listing (see BULLETIN Vol. X No. 2) said the species was on the brink of extinction "if it still exists."

In the spring of 1985, the Mexican Government conducted experimental fishing operations to assess the population status of totoaba in the upper Gulf of California. During these fishing operations and some illegal gill-net sets for totoaba by regional fishermen, at least 13 vaquitas were captured and killed accidentally in the gill nets. Because these specimens were collected when fresh, scientists were able to examine the external appearance of this species for the first time (Brownell, et al., 1987). They found that the most striking features of the coloration are the large black eye patches and the upper and lower lip patches. The most striking morphological feature distinguishing vaquitas from the other two species of *Phocoena* is the proportionately higher dorsal fin. Total lengths of these 13 vaquitas ranged from 70.3 centimeters (a neonate) to 143 cm (an adult female).

During the spring of 1986, Silber (In press) conducted an extensive survey in the northern Gulf of California in an attempt to find live vaquitas and better understand their distribution. He was successful in finding these animals on only 12 occasions. These sightings are thought to represent approximately 31 individuals. Also during the spring of 1986, some additional (and continued illegal) experimental gill net fishing for totoaba was conducted and at least a few porpoises were again taken (Findley, pers. comm.). Illegal and limited experimental fishing continued in the spring of 1987 but it is unknown whether or not any more vaquitas were taken. Silber (pers.

comm.) also returned to the upper Gulf of California to search for the vaquita and again he found small numbers of them in the same general area as in 1986. What does the future hold for these porpoises?

Several threats to the species, such as habitat degradation and destruction, effects of organochlorine pollutants, and reduction of its food supply from overfishing, were discussed when it was listed as Endangered. However, the major problem faced by the vaquita is still the continuation of experimental, illegal, or commercial fishing for totoaba and its sale on the

black market. Any other fishing operations (e.g., shark and manta ray) that involve gill nets also may affect the recovery of these porpoises.

Barlow (1987) reviewed the factors affecting the possible recovery of *P. sinus* and concluded that, given the available data and the inadequacy of current survey techniques for accurately determining the population size of this species, it will be many years before scientists will be able to determine whether the population is increasing or decreasing. It is quite possible

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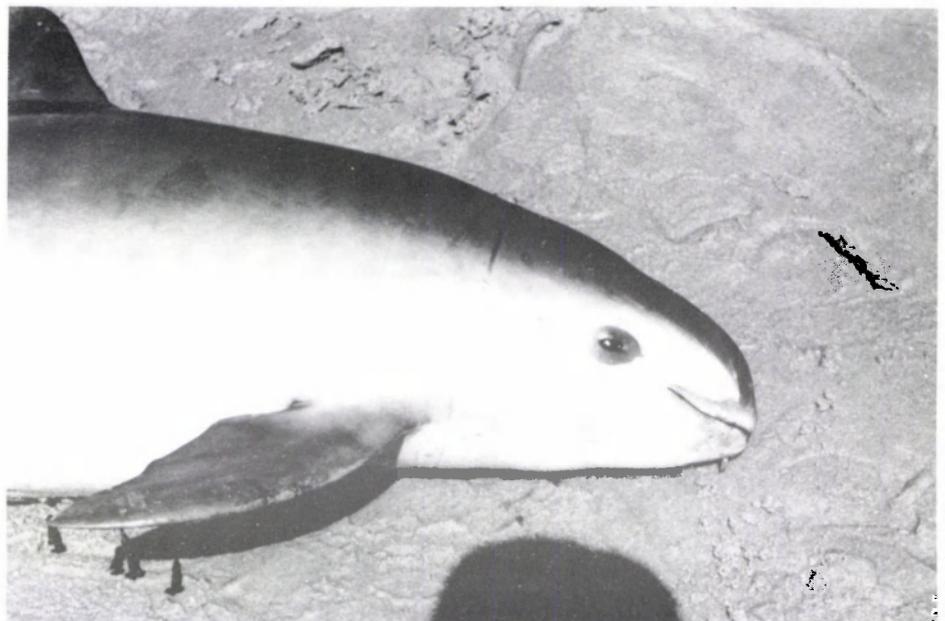


photo by Alejandro Robles

The vaquita's most distinctive markings are the black eye patch and the upper and lower lip patches. Pseudo-stalked barnacles (*Xenobalanus globicipitis*) can be seen attached to the flipper of this specimen.



photo by Alejandro Robles

This vaquita was captured in a gill net that was set for totoaba.

Vaquita

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ble, therefore, that the vaquita could become extinct before scientists have clearly documented a decline in its population or learned much more about its natural history.

References

- Barlow, Jay. 1986. Factors affecting the recovery of *Phocoena sinus*, the vaquita or Gulf of California harbor porpoise. NMFS Admin. Report LJ-86-37, La Jolla. 19 pp.
- Brownell, Robert L., Jr., Lloyd T. Findley, Omar Vidal, Alejandro Robles, and Silvia Manzanilla N. 1987. External morphology and pigmentation of the Vaquita *Phocoena sinus* (Cetacea: Mammalia). Mar. Mamm. Sci., 3(1):22-30.
- Silber, Gregory K. (In press) Recent sightings of the Gulf of California harbor porpoise, *Phocoena sinus*. J. Mamm.

Pesticide Labeling Program Delayed

The Environmental Protection Agency announced in early January that it is deferring implementation of its pesticide labeling program (which was intended to protect Endangered and Threatened species) until 1989. Although the program had been scheduled for implementation on February 1, 1988, the Agency determined that more time is needed to improve the accuracy and public awareness of the program.

The main purpose of the program is to preclude the exposure of certain sensitive listed species to a group of toxic pesticides registered for use on corn, cotton, soybeans, sorghum, small grains, rangeland, forestland, and mosquito larvae. Deferring the implementation will give affected Federal and State agencies, user groups, and conservation organizations time to improve the program's accuracy and lessen its impacts on pesticide users.

Listing Proposal Withdrawn

A proposal to list a Utah plant, the spreading wild buckwheat (*Eriogonum humivagans*), as an Endangered species has been withdrawn (F.R. 1/25/88). New information received since the April 7, 1986, proposal led the Service to conclude that the plant is not taxonomically distinct from *Eriogonum lonchophyllum*, which is not in danger of extinction. As a plant population rather than a distinct taxon, it is not legally eligible for Endangered Species Act protection.

Peregrine Falcon Exhibit Tours Region 5

Ron Joseph
Concord, New Hampshire, Field Office

One of the tasks identified in the revised Eastern Peregrine Falcon Recovery Plan is to attain greater public support for, and understanding of, peregrine falcons (*Falco peregrinus*) through information and education. As a means of contributing to the plan's public education objective, the Service's Concord, New Hampshire, Field Office developed a "Take Pride in Peregrines" exhibit. The exhibit has been on loan to libraries, museums, and other educational centers almost every month since August 1986. An estimated 35,000 to 45,000 people have viewed the exhibit in such places as

Atlantic and southern States. In short, the species has come a long way since 1965 when Dr. Joseph Hickey convened the first international conference to investigate the reasons for the extirpation of the eastern "rock" peregrine and seriously depleted races worldwide.

Exhibit visitors of all ages learn of the combined work of many agencies, organizations, and individuals in restoring this magnificent and noble bird to the eastern United States. Foremost among them is The Peregrine Fund, Inc., which celebrated the release of its 2,000th peregrine last summer. The exhibit also portrays the



photo by Ron Joseph

Public education is important for the recovery of the peregrine falcon, as well as for other listed animals and plants.

the Boston Museum of Science, Forsyth National Wildlife Refuge, and Acadia National Park. The theme of the exhibit is the gradual recovery of the species in the Northeast where, prior to the mid-1940's, over 100 pairs of falcons nested in the States of Pennsylvania, New York, Vermont, Massachusetts, New Hampshire, and Maine.

The peregrine is gradually recovering to reoccupy former breeding sites in the East. Over 850 young peregrines have been released by The Peregrine Fund, Inc., in conjunction with many private, State, and Federal agencies. Since the celebrated arrival of the first wild cliff-nesting peregrines at Franconia Notch, New Hampshire, in 1981, the recovering population now numbers a minimum of 18 nesting pairs in the Northeast. An additional 38 breeding pairs occur in the mid-

new challenge facing peregrines in the east, particularly the potential threat rock climbers pose to nesting birds.

Individuals or organizations interested in borrowing the exhibit for a month should contact Ron Joseph of the Fish and Wildlife Service, 22 Bridge Street, Concord, New Hampshire 03301; (603) 225-1411.

We Need Your Help

To make this *your* BULLETIN, as well as ours, we need your help. Please send the Editor any comments for improving the format, ideas for articles, photographs, and reports on current research and management activities.

Recovery Plans Approved in 1987

Recovery plans for the following Endangered and Threatened species were approved during calendar year 1987:

Common Name	Scientific Name	Date Approved
Tar River spiny mussel	<i>Elliptio steinstansana</i>	01/16/87
Borax Lake chub	<i>Gila boraxobius</i>	02/05/87
black lace cactus	<i>Echinocereus reichenbachii</i> var. <i>albertii</i>	03/18/87
Tobusch fishhook cactus	<i>Ancistrocactus tobuschii</i>	03/18/87
Beautiful goetzea	<i>Goetzea elegans</i>	04/28/87
Vahl's boxwood	<i>Buxus vahlia</i>	04/28/87
Florida mints		07/01/87
longspurred mint	<i>Dicerandra cornutissima</i>	
scrub mint	<i>Dicerandra frutescens</i>	
Lakela's mint	<i>Dicerandra immaculata</i>	
Texas snowbells	<i>Styrax texana</i>	07/31/87
Nashville crayfish	<i>Orconectes shoupi</i>	08/12/87
Gulf Coast beach mice		08/17/87
Alabama beach mouse	<i>Peromyscus polionotus</i> <i>ammobates</i>	
Choctawhatchee beach mouse	<i>Peromyscus polionotus allophrys</i>	
Perdido Key beach mouse	<i>Peromyscus polionotus</i> <i>trissyllepsis</i>	
Navajo sedge	<i>Carex specuicola</i>	08/19/87
Blue Ridge goldenrod	<i>Solidago spithamaea</i>	10/28/87
Minnesota trout lily	<i>Erythronium propullans</i>	12/16/87

As of December 31, 1987, a total of 223 recovery plans covering 263 species had been approved by the Fish and Wildlife Service. (See BULLETIN Vol. XII No. 1 for a list of those plans approved prior to 1987.) Some species have separate recovery plans covering different parts of their range (e.g., the bald eagle), and some plans cover more than one species. Recovery plans also are revised and updated as needed.

Copies of recovery plans are available for purchase about 6 months after they are approved. Requests can be sent to the Fish and Wildlife Reference Service, 6011 Executive Boulevard, Rockville, Maryland 20852, or call toll-free 800/582-3421. (In Maryland, dial 301/770-3000.)

Regional News

(continued from 2)

Regional Office representatives from Regions 1, 2, and 6 met in Las Vegas, Nevada, to discuss eradication of a non-native fish, the red shiner (*Notropis lutrensis*), from a reach of the Virgin River in Utah. Since 1984, when it was first found in the Utah portion of the river, this species has almost completely replaced an Endangered native fish, the woundfin (*Plagopterus argentissimus*). The Washington Fields Irrigation Diversion Dam is the only structure currently preventing the red shiners access to the last uncontaminated reach of woundfin habitat. Based on previous red shiner success at eliminating woundfin from the lower reaches of the river, once the exotic species gains access to the upper reach, it will only take a few years to completely replace the woundfin.

A plan was adopted to construct a fish barrier and then eradicate all fish between the barrier and the dam. Each Region committed resources to the project, which will be conducted jointly with the States of Arizona, Nevada, and Utah. In addition, the Washington County (Utah) Conservation District showed strong support for the

project by pledging both funds and assistance.

Region 4 — In December 1987, the U.S. House of Representatives voted on two proposed Endangered Species Act amendments to modify the National Marine Fisheries Service's Turtle Excluder Device (TED) regulations. One of the amendments would have prevented implementation of these regulations in the Gulf of Mexico for 2 years, but it was defeated. The other amendment, however, did pass the House. It would delay implementation of the regulations in all inshore waters for 2 years and stipulate that the National Marine Fisheries Service must conduct a comprehensive investigation of sea turtle biology and conservation in inshore waters. This amendment, however, awaits further consideration in the Senate. TED regulations have been used successfully in Cape Canaveral, Florida, waters since October 1, 1987.

Region 5 — A team has been appointed to draft a recovery plan for the northeastern United States population of the roseate tern (*Sterna dougalii dougalii*), which was listed recently as Endangered (F.R. 11/2/87). Ralph Andrews of the Service's Region 5 office is the team

leader. Other members represent State and private interests.

Cooperative Agreements with several northeastern State conservation agencies, authorized under Section 6 of the Endangered Species Act, were approved recently. An agreement with Vermont covering listed animals was signed November 19, 1987, and a plant agreement with Maryland was signed December 17, 1987. (Maryland now has Section 6 agreements for both animals and plants.) As of February 1, 1988, all 13 of the States in Region 5 had approved agreements for animals and 10 had agreements for plants.

Region 6 — One of the 25 black-footed ferrets (*Mustela nigripes*) housed in the Wyoming Game and Fish Department's Sybille captive breeding facility died January 25 of a "nasal carcinoma." The 4-year-old female named Willa was captured in fall 1985 near Meeteetse, Wyoming. She had not produced offspring while in captivity and is unrelated to other captive ferrets, so her death is a loss, both genetically and physically, to the captive breeding program.

In May 1987, the Fish and Wildlife Service initiated efforts to establish an interstate coordinating committee to address general issues and problems relating to recovery of the black-footed ferret. Members of the committee include staff biologists from each of the Service's affected Enhancement State Offices, State biologists from each State participating in ferret recovery, a representative of the Service's National Ecology Research Center, and a member of the Captive Breeding Specialist Group of the International Union for the Conservation of Nature. State and Service biologists serving on this committee are responsible for organizing working groups to provide a Statewide representation of disciplines with influence and responsibilities for ferret recovery actions in their respective States. Other specialists will be invited, as needed, to provide input.

The interstate committee held its first meeting in Billings, Montana, in July 1987. This meeting resulted in recommendations to:

1. develop an interstate cooperative agreement to conduct black-footed ferret searches and administer a national ferret reward fund;
2. develop contingency plans for ferrets located in the wild outside of the Meeteetse, Wyoming, ferret area;
3. develop minimum criteria for evaluating potential reintroduction sites for ferrets;
4. develop and recommend a funding strategy plan for ferret recovery; and

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Regional News

(continued from page 9)

5. develop and recommend draft policy for management of potential ferret habitat outside potential reintroduction areas identified by each State working group over the next 5 or more years.

The next meeting of the committee is scheduled for March 1988 in Denver, Colorado. This session will attempt to bring together preliminary maps of prairie dog distribution and discuss final recommendations for criteria and standards to be applied to potential ferret reintroduction sites.

In summer 1986, the Montana Department of Fish, Wildlife and Parks began a Statewide ferret reward program sponsored by Wildlife Conservation International (WCI), a division of the New York Zoological Society. Persons submitting photographs or information that result in the verification of one or more live black-footed ferrets will be awarded \$5,000 by WCI. The Montana Department of Fish Wildlife and Parks designed and circulated new reward posters, sighting report mail-in forms, and a sighting ranking guide.

In fall 1987, the National Ecology Research Center began working with WCI on an expanded reward program in most of the States that still have adequate ferret habitat. Participating States will send reports to the Service's Ferret Search Coordinator at the Center in Fort Collins, Colorado. Service personnel at the Center have conducted searches throughout the former range of the black-footed ferret and were principal investigators of the Meeteetse site. They are equipped to respond to the most promising reports with on-site investigations.

At present, Montana, Wyoming, Utah, Colorado, Oklahoma, and South Dakota are participating in the reward program. Reward posters are being displayed throughout the participating States, and State and local organizational newsletters will assist in publicizing the reward program. Contingency plans are being formulated in each State in the event a new population of black-footed ferrets is located.

Colorado's peregrine falcon (*Falco peregrinus*) population is recovering more rapidly than the State had originally anticipated. The official recovery goal had been 31 effective breeding pairs by 1995. It now appears that this goal may be reached as soon as 1988. For the 1987 season, there were 24 pairs; 23 of these pairs laid eggs and 22 pairs successfully fledged at least 55 young. The Colorado Division of Wildlife removed 17 eggs for

transfer to The Peregrine Fund; of the 17, 12 hatched. Seventeen young were returned to five sites, and all but one fledged. In addition, 22 peregrines were released from 5 hack sites, with 19 reaching independence.

Wyoming had four known pairs of peregrines in the 1987 season. One of the two hack sites in Yellowstone National Park fledged three young, but the second pair failed to raise young. Several weeks after young peregrines were released from a new site on lands administered by the U.S. Forest Service, a banded adult was sighted. Five days later, the adult was back, accompanied by an unbanded, immature peregrine that kept screaming at the adult for food. The young peregrine must have been one of the offspring from a successful nesting in the area. Five hack sites were used in Wyoming, and 25 peregrines were released, with 21 reaching independence.

Four of five known pairs in northern Utah are nesting on hack towers constructed by the Utah Division of Wildlife Resources and Utah Power and Light Company. All of the pairs on towers produced eggs and three of the four pairs produced seven young (of which at least two fledged successfully). The pair at the Hotel Utah was successful and fledged two young. Nineteen peregrines were released from four hack sites, with sixteen reaching independence.

In southern Utah, personnel from The Peregrine Fund and National Park Service conducted a survey and found 19

occupied territories. Twelve pairs were successful in producing at least three young. Fifty occupied territories have been identified over the past 2 years in southern Utah.

Region 8 (Research) — A juvenile whooping crane (*Grus americana*) was fatally injured during fall migration when it struck a powerline bordering Monte Vista National Wildlife Refuge. Necropsy at the National Wildlife Health Research Center in Madison, Wisconsin, indicated the bird, although not emaciated, was suffering from an advanced case of avian tuberculosis. Of 16 whoopers necropsied at the Center over the past decade, 6 were found to have avian tuberculosis, an unusually high prevalence in a wild population.

More than 150 brown pelicans (*Pelecanus occidentalis*) were found dead in October in the San Luis Obispo and Monterey, California, areas. Two of the birds, necropsied at the Center, were found to be infected with *Erysipelothrix rhusiopathiae*, a bacteria common on the surface of fish and marine mammals. Four additional pelicans from a later, smaller die-off also were necropsied. *Erysipelothrix* was again found to be the cause of death. Collaborative investigations by the California Department of Fish and Game, The Health Center, and the University of California at Davis are attempting to locate the source of the infection.



brown pelican

Photo by Thomas C. Maurer, USFWS

Recovery Efforts Initiated for Humpback and Right Whales

Gloria Thompson
National Marine Fisheries Service

The National Marine Fisheries Service has initiated recovery efforts under the Endangered Species Act for the humpback whale (*Megaptera novaengliae*) and the right whale (*Balaena glacialis*), both of which are listed as Endangered. Under the Act, the agency has responsibility for developing and implementing recovery plans for most listed marine species.

During reauthorization hearings for the Act in April 1987, Dr. William E. Evans,

the agency's Assistant Administrator, committed it to develop recovery plans for these Endangered whales. Subsequently, the agency set up recovery teams comprised of scientists and managers knowledgeable in matters concerning the two whales to review and comment on the recovery plans that are being prepared by the agency's Office of Protected Resources and Habitat Programs (with assistance from the agency's five regional

offices). Draft plans will be made available for public review in May 1988 for the humpback whale and in July 1988 for the right whale.

For further information, please contact Gloria Thompson for the humpback whale plan and Bob Ziobro for the right whale plan at the Office of Protected Resources and Habitat Programs, National Marine Fisheries Service (202) 673-5348).



Photo by Tracy McKenzie

humpback whale breaking the ocean surface

BOX SCORE OF U.S. LISTINGS AND RECOVERY PLANS

Category	ENDANGERED			THREATENED			SPECIES* TOTAL	SPECIES WITH PLANS
	U.S. Only	U.S. & Foreign	Foreign Only	U.S. Only	U.S. & Foreign	Foreign Only		
Mammals	28	19	240	3	3	23	316	23
Birds	60	15	146	7	3	0	231	55
Reptiles	8	7	59	14	4	14	106	21
Amphibians	5	0	8	4	0	0	17	6
Fishes	39	4	11	25	6	0	85	45
Snails	3	0	1	5	0	0	9	7
Clams	28	0	2	0	0	0	30	21
Crustaceans	5	0	0	1	0	0	6	1
Insects	8	0	0	7	0	0	15	12
Plants	134	6	1	30	3	2	176	56
TOTAL	318	51	468	96	19	39	991	263 **

Total U.S. Endangered 369

Recovery Plans approved: 223

Total U.S. Threatened 115

Species currently proposed for listing: 17 animals

Total U.S. Listed 484

31 plants

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

**More than one species are covered by some recovery plans, and a few species have separate plans covering different parts of their ranges.

Number of Cooperative Agreements signed with States and Territories: 51 fish & wildlife
January 31, 1988 36 plants

February 1988

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ENDANGERED SPECIES

Technical Bulletin

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