

ENDANGERED SPECIES

Technical Bulletin

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

Texas Fish, Considered Extinct, is Proposed for Delisting

The Amistad gambusia (*Gambusia amistadensis*), a small fish known from a single spring in Val Verde County, Texas, is widely considered to be extinct. Accordingly, the Fish and Wildlife Service (FWS) recently proposed to remove it from the list of Endangered and Threatened wildlife (F.R. 3/11/87).

The original description of *G. amistadensis* was based on specimens collected in 1968 from Goodenough Spring, a tributary of the Rio Grande, just prior to its inundation by the rising Amistad Reservoir. They were not recognized as

members of a distinct species until well after construction of Amistad Dam, a U.S. Army Corps of Engineers project, had begun. The impoundment put the spring under more than 70 feet (21 meters) of silty water, changed water temperatures, and eliminated the shoreline aquatic vegetation inhabited by the gambusia from the spring area. By 1973, when the species was formally described, it was already extinct in its native habitat. *G. amistadensis* was listed as an Endangered species in 1980, at which time it occurred only in captivity at the University of Texas in Austin

and at Dexter National Fish Hatchery in New Mexico. Since that time, all captive populations have died or have been eliminated through hybridization with, and predation by, the mosquitofish (*Gambusia affinis*).

* * *

Comments on the proposal to remove the Amistad gambusia from its Endangered classification are welcome, and should be sent to the Regional Director, Region 2 (address on page 2 of this BULLETIN), by May 11, 1987.

National Marine Fisheries Service Proposes Shrimp Fishing Industry Use of Turtle Excluder Devices

Gloria Thompson

Office of Protected Species and Habitat Conservation
National Marine Fisheries Service

In the March 2, 1987, *Federal Register*, the National Marine Fisheries Service (NMFS) of the U.S. Department of Commerce proposed rules that would require shrimp trawlers in the Gulf of Mexico and in the Atlantic Ocean off the coast of the southeastern United States to use approved gear in specified locations and at specified times in order to reduce incidental captures of Endangered and Threatened sea turtles in shrimp trawls.

These proposed rules had been jointly recommended to NMFS by representatives of affected shrimpers and several environmental groups as offering the best prospect for reducing incidental sea turtle drownings as near to zero as possible while avoiding, to the greatest extent possible, adverse economic effects on the shrimp fishing industry. They contain criteria and procedures for testing and approving turtle excluder devices (TEDs), specify areas and seasons in which approved TEDs must be used, extend current reporting requirements, extend existing measures for resuscitation and release of captured sea turtles, continue current designations of Critical Habitat, and state the Departmental enforcement policy with respect to violations of the Endangered Species Act (ESA) and these rules.

All five species of sea turtles (loggerhead, Kemp's ridley, green, leatherback, and hawksbill) found in marine waters off the southeastern U.S. and the Gulf of Mexico are protected by the ESA. (NMFS has legal authority over sea turtles in the water and the Fish and Wildlife Service has authority when they are on land.) One threat facing these species is that many are caught in shrimp trawls. Based on observer data, NMFS estimates that annually 47,973 are incidentally caught, and that 11,179 of them die. An estimated 767 Kemp's ridleys alone are killed each year by the off-shore shrimp fleet in the southeastern U.S. This species is in the greatest peril of extinction; its nesting numbers have dwindled from an estimated 40,000 in one day in 1947 to an annual estimate of 572 in 1986 (due to a number of factors).

Stranding Data

Some sea turtles that die in U.S. waters wash toward shore and are found stranded in coastal areas. Because of the protected status of the species, a need to collect information about the species, and interest from the public, NMFS, in cooperation with the States, established a volunteer

network in 1979 to patrol coastal U.S. beaches and report on strandings. From January 1980 through December 1986, 8,317 marine turtles (excluding those from the NMFS "headstart" program) were reported as stranded.

Often it is impossible to determine the cause of death of a stranded turtle. Not all of the sea turtles that strand can be attributed to shrimp trawling; however, there often is a correlation between the level of strandings and major shrimping efforts. This correlation has been documented by scientists and Sea Turtle Stranding and Salvage Network personnel from South Carolina to Florida, as well as Louisiana and Texas. Stranding reports tend to corroborate the data from direct capture observations, and together they indicate that shrimp trawling is a significant source of sea turtle mortality.

Gear Research

In 1978, NMFS initiated a research program to develop gear that would reduce the mortality of sea turtles associated with shrimp trawling. Other project goals were to prevent significant shrimp loss and to minimize the economic impacts on

(continued on page 4)



Regional News

Endangered species program regional staff members have reported the following activities for the month of March:

Region 1 — The Fish and Wildlife Service's (FWS) Sacramento Endangered

Species Office (SESO) met with representatives of the California Department of Fish and Game, Bureau of Land Management, and Chevron U.S.A. in February regarding a proposed 27-square mile seismic exploration project. The proposed

action involves systematically drilling 700-foot test holes and setting off 50-pound charges of dynamite to determine a potential for oil and gas reserves. It may affect three federally-listed Endangered species, the San Joaquin kit fox (*Vulpes macrotis mutica*), blunt-nosed leopard lizard (*Gambelia silus*), and giant kangaroo rat (*Dipodomys ingens*). Chevron U.S.A. will conduct initial searches for occurrence of these species. Possible mitigation includes avoidance of kit fox dens and giant kangaroo rat colony sites; use of a minimum 200-foot buffer to prevent burrow collapse from seismic explosion; implementation of an employee training program; limiting vehicles to existing roads; rehabilitation of disturbed habitats; and construction of barriers, fences, and gates after project actions to minimize future off-road vehicle use.

The Bureau of Land Management and Department of Energy, as the Federal permitting agencies, will be consulting formally with the FWS on this project.

U.S. Fish and Wildlife Service Washington, D.C. 20240

Frank Dunkle, *Director*
(202-343-4717)

Ronald E. Lambertson
*Assistant Director for Fish
and Wildlife Enhancement*
(202-343-4646)

John Christian, *Acting Chief
Office of Endangered Species*
(703-235-2771)

Earl B. Baysinger, *Chief,
Federal Wildlife Permit Office*
(703-235-1937)

Clark R. Bavin, *Chief,
Division of Law Enforcement*
(202-343-9242)

TECHNICAL BULLETIN Staff
Michael Bender, *Editor*
Denise Henne, *Assistant Editor*
(703-235-2407)

Regional Offices

Region 1, Lloyd 500 Bldg., Suite 1692, 500 N.E. Multnomah St., Portland, OR 97232 (503-231-6118); Rolf L. Wallenstrom, *Regional Director*; David F. Riley, *Assistant Regional Director*; Wayne S. White, *Endangered Species Specialist*.

Region 2, P.O. Box 1306, Albuquerque, NM 87103 (505-766-2321); Michael J. Spear, *Regional Director*; Conrad A. Fjettland, *Assistant Regional Director*; James Johnson, *Endangered Species Specialist*.

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

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

Region 3, Federal Bldg., Fort Snelling, Twin Cities, MN 55111 (612-725-3500); Harvey Nelson, *Regional Director*; John S. Popowski, *Assistant Regional Director*; James M. Engel, *Endangered Species Specialist*.

Region 4, Richard B. Russell Federal Bldg., 75 Spring St., S.W. Atlanta, GA 30303 (404-331-3580); James W. Pulliam, *Regional Director*; John I. Christian, *Assistant Regional Director*; Marshall P. Jones, *Endangered Species Specialist*.

Region 5, One Gateway Center, Suite 700, Newton Corner, MA 02158 (617-965-5100); Howard Larson, *Regional Director*; Stephen W. Parry, *Assistant Regional Director*; Paul Nickerson, *Endangered Species Specialist*.

Region 6, P.O. Box 25486, Denver Federal Center, Denver, CO 80225 (303-236-7920); Galen Buterbaugh, *Regional Director*; John D. Green, *Assistant Regional Director*; Barry S. Mulder, *Endangered Species Specialist*.

Region 7, 1011 E. Tudor Rd., Anchorage, AK 99503 (907-786-3542); Robert E. Gilmore, *Regional Director*; Jon Nelson, *Assistant Regional Director*; Dennis Money, *Endangered Species Specialist*.

Region 8 (FWS Research and Development), Washington, D.C. 20240; Richard N. Smith, *Regional Director*; *Endangered Species Staff*; Clarence Johnson, *fish and crustaceans* (202-653-8772); Bettina Sparrowe, *other animals and plants* (202-653-8762).

Sand City, California (Monterey County), has proposed to rezone and redevelop coastal and dune habitats that may contain Endangered Smith's blue butterflies (*Euphilotes enoptes smithi*). Smith's blue butterflies have been collected from sand dune habitats in Sand City as recently as July 1986. The SESO informed the city about the prohibitions in the Endangered Species Act regarding incidental take of listed species and the regulatory process that has been established for issuing permits to authorize such incidental take.

Pursuant to stipulations on a U.S. Army Corps of Engineers permit and recommendations made through formal consultation for the filling of 180 acres of wetlands at Oakland Airport, the SESO is working with other agencies to develop a management agreement with the Port of Oakland. This agreement will provide for a secure California least tern (*Sterna antillarum brownii*) nesting colony. The other involved agencies include the San Francisco Bay Conservation and Development Commission, California Department of Fish and Game, and the Federal Aviation Administration.

SESO and FWS Ecological Services personnel met with the Environmental Protection Agency, California Department of Fish and Game, and San Francisco Water Department to resolve a recent illegal filling and destruction of wetland habitat believed to support the San Francisco garter snake (*Thamnophis sirtalis tetrataenia*). The site has been completely bulldozed and drained, eliminating 6 to 10 acres of former wetland habitat. The Water Depart-

(continued on page 2)

White Bladderpod Listed as Endangered Plant

The white bladderpod (*Lesquerella pallida*), an annual plant in the mustard family (Brassicaceae), has been listed by the Fish and Wildlife Service (FWS) as Endangered (F.R. 3/11/87). This species currently is known only from three populations in San Augustine County, Texas, where it is restricted to wet, open areas associated with the Weches geological formation. All three populations occur on privately owned pasture lands, although one extends onto a county road right-of-way. *L. pallida* was proposed for listing as an Endangered species on April 9, 1986 (see summary in BULLETIN Vol. XI No. 5), because of the potential threats posed by in-

creased grazing, herbicide application, road maintenance or widening, and encroachment by more aggressive plants.

Among the benefits provided for listed plants by the Endangered Species Act are protection from adverse effects of Federal activities, prohibitions on interstate/international trafficking, the requirement for the FWS to develop and implement a recovery plan, and the authorization to seek land exchanges or purchases to protect important habitat. Listing also lends greater recognition to a species' precarious status, which can encourage additional conservation efforts by State and local agencies, various organizations, and individuals.

Regional News

(continued from page 2)

ment has informally agreed to restore the wetland habitat. In addition, it will propose to secure additional wetland habitat off-site to compensate for the interim loss of habitat.

* * *

The SESO staff and the Bureau of Land Management have prepared a report to Congress on the proposed Carrizo Natural Heritage Reserve. The 180,000-acre reserve would secure habitat in perpetuity for the Endangered San Joaquin kit fox, blunt-nosed leopard lizard, giant kangaroo rat, and California condor (*Gymnogyps californianus*), as well as several Federal candidates and State-listed species. The project would be funded through a combination of Land and Water Conservation Fund allocations, land exchanges, and private contributions. About 25,000 acres currently are in public ownership.

* * *

A multi-agency team, including representatives of the FWS Boise, Idaho, Field Office and the Idaho Department of Fish and Game, has captured 26 caribou (*Rangifer tarandus*) in British Columbia using helicopters and net guns. They were thoroughly checked for any signs of health problems before being transported to the release site northeast of Bonners Ferry, Idaho, to augment the Endangered Selkirk Mountain herd. (Two of the animals died while being held, but the other 24 were released in apparently good health.) All 24 were radio-collared. Once the caribou have settled down in their new location, students at various Idaho elementary schools will be allowed to name and adopt a caribou. The Idaho Department of Fish and Game will issue weekly reports that will enable the students to track the movement of their special animal.

Region 2 — Due to efforts by FWS Williams Creek National Fish Hatchery (NFH) personnel, fingerling Apache trout (*Salmo apache*) will be available for reintroduction this fall. The Apache trout is a Threatened species native to the White Mountains of Arizona. In 1975, the species was reclassified from Endangered to Threatened and special regulations were written that allowed for their limited take. The hatchery project began in 1983, when eggs were taken from wild Apache trout and reared in William Creek NFH. This spring, hatchery-reared trout spawned for the first time, providing 100,000 eggs that will produce about 50,000 fingerlings for reintroduction.

The hatchery culture of the Apache trout has been extremely successful due to the innovative culture techniques employed by the hatchery's Assistant Manager, Bob David. David designed a feeding system that simulated drift feeding, automatically providing fry-sized fish with brine shrimp. As the fish grew, they were gradually weaned from the shrimp with pelleted feed. The fingerlings thus produced will be used this fall to stock reaches of reclaimed streams on the Fort Apache Indian Reservation and Apache-Sitgreaves National Forest. Eventually, Apache trout may replace introduced rainbow trout (*Salmo gairdneri*) as the sport fish throughout much of the former's historical range.

* * *

The Secretary of Fisheries for the Republic of Mexico has initiated an immediate program to institute use of the Turtle Excluder Device (TED) in all shrimp trawls fishing in Mexican waters of the Gulf of Mexico. There will be no exemptions for TED use in waters under Mexican jurisdiction. (A proposal now under consideration for TED use in U.S. waters would allow for several types of exemptions depending on seasons and depths where fishing occurs.) The Tampico shrimp fleet has been designated as the first fleet to be equipped with

and to use TEDs. The Campeche fleet will follow upon completion of the Tampico effort.

The Secretary stated that this action is a further step in supporting the President of Mexico's recent designation of 15 sea turtle nesting beaches as sea turtle sanctuaries. This action will further establish Mexico as one of the world's leading nations in the management and conservation of sea turtle resources. The Secretary also stated that he hopes neighboring nations will take similar actions in recognition of the need for international cooperation in the management of sea turtle resources.

* * *

The Whooping Crane Recovery Team met in Albuquerque March 10 and 11 and participated in a tour of the Middle Rio Grande Valley on the 12th. Recovery activities since the March 1985 meeting were reviewed and plans made for team participation in key future events. Dr. James Lewis, FWS Whooping Crane Coordinator, was banquet speaker at the 4th Annual Whooping Crane Festival in Monte Vista, Colorado, and he participated in other festival weekend events.

Ten whooping cranes were still present at Bosque del Apache National Wildlife Refuge on March 8. Whooping cranes have typically left New Mexico and migrated into Colorado by late February. Most whooping cranes had left New Mexico by March 11. The record late northward departure date was believed to be due to late winter storms, abundant foods still available at the Bosque del Apache refuge, and the absence of late February snow goose hunting that had occurred on the refuge in previous years.

A juvenile whooping crane wintering with sandhill cranes in western Oklahoma left the State March 11 and was first seen in Nebraska March 15. It was roosting on the Lilian Annette Rowe National Audubon Sanctuary and feeding on private lands near Gibbon, Nebraska.

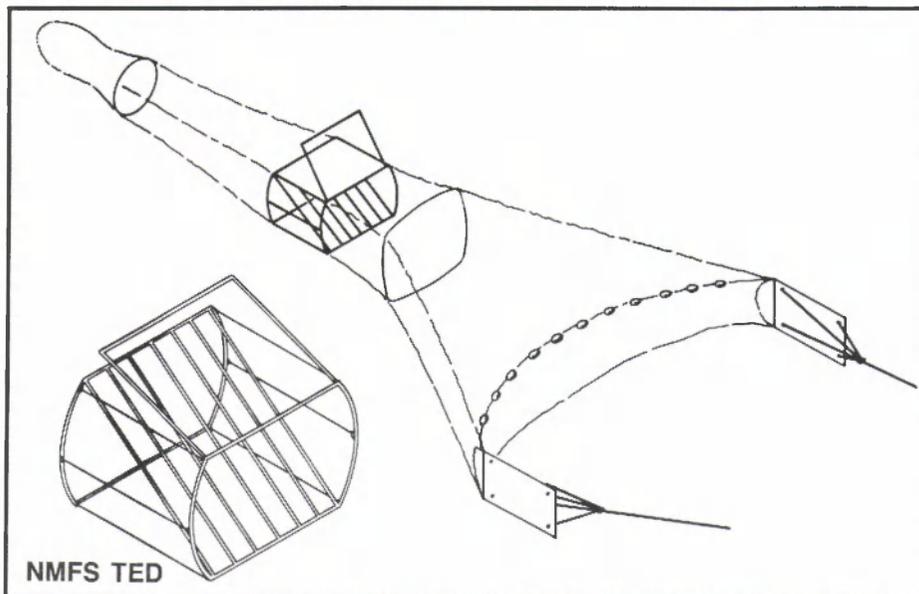
* * *

A count of booming male Attwater's greater prairie chickens (*Tympanuchus cupido attwateri*) on Attwater Prairie Chicken NWR, Texas, resulted in a total of 111 males observed and an estimated total of 222 chickens on the refuge. When the refuge was first established in 1973, only 25 prairie chickens were known to occur on the area. The nine-fold increase can be related to improved management and protection provided by the refuge. A total count of Attwater's prairie chickens in Texas has yet to be made, but past counts have indicated a steady decline off the refuge area.

* * *

Last July (1986), the FWS met with biologists from Arizona, New Mexico, and

(continued on page 6)



gear. Despite their hard work on this issue, the voluntary program was not successful. Only a very small number of the estimated 17,200 shrimp trawlers currently are using TEDs.

Proposed Regulations

After the failure of the voluntary TEDs program, the Director of the NMFS Southeast Region developed draft regulations that would require use of TEDs in certain areas. Concern about the proposal led to the formation of a group of shrimp industry and environmental community representatives to negotiate a mutually agreeable solution. The negotiating team reached an agreement that all but one of the participants signed. The members recommended this agreement as offering the best prospect for reducing the incidental catch and mortality of sea turtles associated with shrimp trawling while avoiding, to the greatest extent possible, adverse economic effects on the shrimp industry. Therefore, on March 2, 1987, NMFS issued the proposed rule that would implement the conditions of the mediated agreement. (Since then, two of the industry organizations represented in the negotiating group that signed the agreement have stated that they no longer endorse the agreement.)

This proposed rule would provide for a sequential transition to increased TED use. The initial focus is on areas and times most critical for the conservation of sea turtles; later, it will expand to other important areas and times. The proposed implementation schedule is summarized as follows:

Excluder Devices

(continued from page 1)

shrimpers. The earliest solution, called an excluder panel, was a barrier fitted across the mouth of the trawl. The panel was made of large webbing that would prevent sea turtles from entering the net but allow shrimp through the openings. The best configuration reduced the catch of sea turtles by 75 percent but also reduced the shrimp catch by 15 to 30 percent. Because of the high shrimp loss, this was not an acceptable solution and the excluder panel was abandoned.

Another technique to reduce turtle mortality documented as part of this program was to reduce the tow time for trawls. Analysis of incidental capture data showed a direct correlation between tow time and sea turtle mortality. As tow time increases, turtle mortality increases.

Research on the NMFS TED began in 1980. By 1981, NMFS had developed gear that would reduce the incidental catch of sea turtles by 97 percent with no loss of shrimp. Since the development of the prototype TED, NMFS has worked with Sea Grant, commercial shrimpers, and others to refine it. The TED was reduced in size and made lighter and collapsible for safer, easier handling. A number of comments, suggestions, and constructive criticisms were studied and tested. Those that worked were adopted into the design.

This gear has other benefits in addition to saving sea turtles. It releases debris and by-catch such as sharks, rays, jellyballs, and horseshoe crabs. Additional separators can be installed to release most unwanted finfish, up to 78 percent during the day and up to 53 percent at night.

Voluntary TED Program

NMFS began a formal program in 1983 to encourage shrimpers to use the TED voluntarily. TEDs were built and delivered to shrimpers who agreed to use them in

commercial shrimp trawling operations. NMFS gear experts worked with these shrimpers to properly install and use the TEDs. NMFS also worked with Sea Grant and industry groups to transfer this technology. The Southeastern Fisheries Association, Texas Shrimp Association, and the Bryan County Fisheries Cooperative were helpful throughout the technology transfer program. Several environmental organizations, including the Center for Environmental Education, Greenpeace, the Environmental Defense Fund, and Monitor International, also provided advice and assistance.

An advisory group, co-chaired by an industry member and a member representing a conservation group, was formed to assist the industry in adopting the new

Season and Area Requirements			
	Effective Date	Season	Area
South Atlantic			
Offshore	July 15, 1987	all year	Cape Canaveral area to 200 miles
	January 1988	May through August	northern Florida to Ocracoke Inlet; shore to 200 miles
Inshore	January 1, 1988	all year	Cape Canaveral area to N.C.-S.C. border
Gulf of Mexico			
Offshore Eastern	July 15, 1987	all year	southwestern Florida and Florida Keys; less than 10 fathoms
Western	July 15, 1987	March through November	Mobile Bay to Mexico border; less than 10 fathoms
Inshore Louisiana	July 15, 1987	March through November	Breton and Chandeleur Sounds
Eastern	July 15, 1987	all year	southwestern Florida
Western	July 15, 1988	March through November	Mobile Bay to Mexico Border

cluder Devices

(continued from previous page)

"Inshore" means marine or tidal waters landward of the baseline from which the territorial sea of the United States is measured, and "offshore" means seaward of the baseline.

The July 15, 1987, starting date may be delayed to January 1, 1988, in certain areas or for certain trawlers if NMFS determines that there are insufficient TEDs available.

On January 1, 1989, TED requirements will be extended to water depths up to 15 fathoms in the same offshore areas of the Gulf of Mexico. This will provide significant additional protection to the critically Endangered Kemp's ridley turtle. TEDs will also be required in April and/or September 1989 north of Cape Canaveral to central North Carolina if NMFS has determined that there has been less than 80 percent total use of TEDs in these months during 1988.

Approved TEDs

Under the proposed rule, four TEDs designs — the NMFS, Cameron, Matagorda, and Georgia versions — are approved devices. All four have been shown to have very high turtle exclusion rates.

Trawl Efficiency Testing

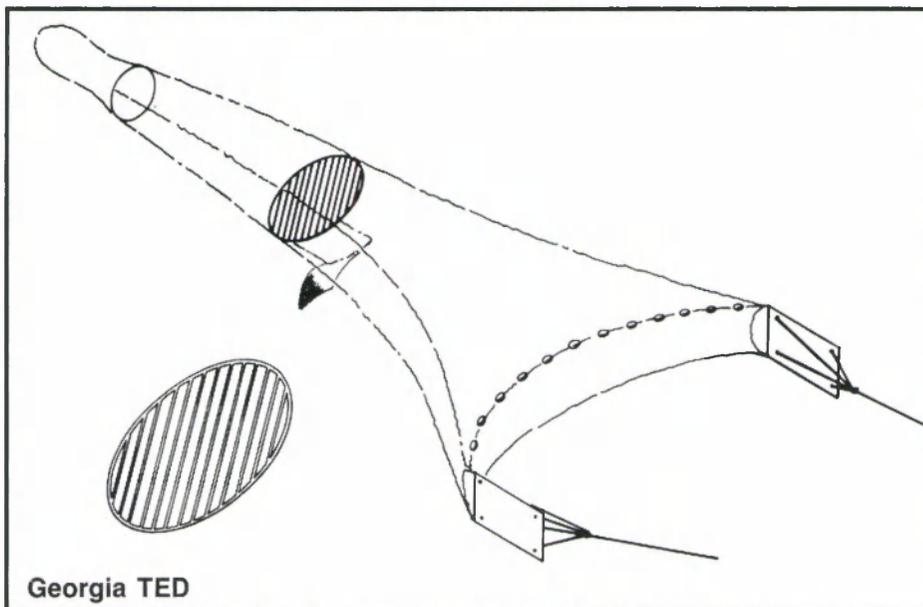
The rules provide a procedure for testing additional devices for approval. All tests for turtle exclusion will be conducted under NMFS supervision. Normally, these tests will be conducted off Cape Canaveral, Florida, using a scientific protocol developed by NMFS scientists.

The negotiators wanted to encourage additional experimentation in hopes of providing even better and less costly TEDs. The proposed rule provides the Director of NMFS' Southeast Region with the authority to allow TED efficiency experiments to be conducted by private parties. NOAA has a test protocol to aid in calculating shrimp retention and bycatch exclusion rates which the experimenter can use.

Exemptions

Shrimp trawlers using a single net with a headrope of 30 feet or less, or using two nets each with headrope lengths of 30 feet or less that are not connected to each other and are towed from opposite sides of the trawler, are exempt for TED requirements. A single independent test net with a headrope of 20 feet or less also is exempt.

Shrimp trawlers fishing for royal red shrimp in the Gulf of Mexico or royal red or rock shrimp in the Atlantic Ocean are exempt as well from TED requirements provided that 90 percent of the shrimp aboard the trawler are either of those species. Those fisheries occur in very deep



water, where sea turtles are rarely encountered.

Enforcement Policy

The proposed rule notifies the public of the following interpretation and enforcement policy:

- shrimp fishermen who do not use TEDs in the areas and at the times required by the rules are in violation of the Endangered Species Act; and
- enforcement action will not be taken against shrimp fishermen who comply with the rules, even if Endangered sea turtles are incidentally taken.

Economic Effects of the Proposal

The economic effects of the proposed rule are discussed in detail in a Regulatory Impact Review that was prepared in conjunction with a draft supplement to the final environmental impact statement on "Listing and Protecting the Green Sea Turtle, Loggerhead Sea Turtle and Pacific Ridley Sea Turtle Under the Endangered Species Act of 1973."

The total annual costs for TEDs will be between \$3.7 and \$7.4 million for the entire fleet, or \$100 to \$1,200 per trawler, based on a 2-year life for TEDs, repair costs, and spare TEDs.

Based on available information, NMFS believes that there will be no significant shrimp loss. In fact, some tests using the Georgia and NMFS TEDs have shown an increased catch.

Changes in the amount of bycatch will have both positive and negative economic effects. On the positive side, undesirable bycatch such as sharks, jellyfish, and debris will be reduced, resulting in a small positive benefit. However, in certain areas, some of the bycatch (for example, flounders and spiny lobster) is sold. Re-

duction in the catch of these species will result in a corresponding economic loss of between \$220,000 and \$350,000 annually for the entire industry.

A final cost is associated with reporting requirements contained in the proposed regulations. For the first year, the industry-wide cost is estimated to be \$32,000, and \$20,000 annually thereafter.

The total of these costs is estimated to be between \$4 and \$8 million each year. Additionally, administration and enforcement of the program will cost the Federal Government an estimated \$1.6 million each year, for a combined total annual cost of between \$5.6 and \$9.6 million.

Other Action

The working group did not address in detail changes beyond 1989. Its agreement states that if less than 80 percent of the Gulf-wide shrimp effort is with TED-equipped nets, then additional requirements would be imposed to ensure at least 80 percent Gulf-wide coverage. However, this additional requirement would be waived if, by that date, Mexico has achieved comparable use of turtle excluder gear. (*Editor's note: The Republic of Mexico recently announced a program to institute the use of TEDs in all shrimp trawls within its waters, as well as other sea turtle conservation measures. See Region 2 news in this month's BULLETIN.*) The working group also recommended that conservation agreements be pursued with other Caribbean nations. Such nations should be encouraged to require use of TEDs by their shrimpers and to adopt other turtle conservation activities.

Further information on TEDs is available by writing the National Marine Fisheries Service, Office of Protected Species and Habitat Conservation, 1825 Connecticut Avenue, N.W., Washington, D.C. 20235 or telephone (202) 673-5348.

Regional News

(continued from page 3)

Texas to discuss the possibilities of reintroducing the Mexican wolf (*Canis lupus baileyi*) back into the southwestern U.S., as called for in the 1982 Mexican Wolf Recovery Plan. Eight sites were suggested for evaluation (Texas — Big Bend and Guadalupe Mountains National Parks; New Mexico — White Sands Missile Range and Gila National Forest; Arizona — four localities in the Coronado National Forest). In response to those suggestions, Texas declined to recommend any sites, New Mexico recommended White Sands as a possible site, and Arizona suggested a total of 15 localities that it is now arranging in priority. After a preliminary information meeting with the military and National Park personnel last month, it was decided to request permission to evaluate White Sands Missile Range as a possible reintroduction site. Criteria to be evaluated include prey base, competition, open water, human impacts, access, and cover. Public opinion, the National Environmental Policy Act, and Endangered Species Act — Section 7 consultation also will be considered before a final site selection is made. When a reintroduction site is selected, wolves in that area will first be listed as an experimental, nonessential population in order to allow more flexible management of the introduced animals and their offspring both on and off the introduction area.

Mexican wolves have been extirpated from the U.S. since 1970, and have not maintained a resident population here since the early 1900's. Twenty-seven Mexican wolves are currently housed at four zoos, the offspring of four wolves captured in Mexico during 1977-1980.

Region 4 — On February 25, 1987, biologists from the FWS Jacksonville, Florida, Field Office inspected the only remaining

natural population of the Stock Island tree snail (*Orthalicus reses nesodyras*) at Key West, Monroe County, Florida. (A few introduced populations may exist elsewhere in the Florida Keys.) The Stock Island population is now confined to about 20 trees in and adjacent to a county parking lot. The county has placed rocks around the trees to prevent vehicular damage, and has also deposited soil around the bases of the trees to provide an egg-laying substrate for the snails. Only 12 snails, all in aestivation, were observed. The last survey of the snails during their active season was done in July 1986, and it indicated that as few as 27 Stock Island tree snails may remain in this colony.

* * *

The Jacksonville District of the U.S. Army Corps of Engineers has published a public notice for a proposed General Permit to build boat docking facilities in manatee (*Trichechus manatus*) Critical Habitat. General Permit SAJ-55, if implemented, will allow the construction of boat docks or slips at a density of two per 100 feet of shoreline with a ratio of 1:1 power to sail. For example, if an applicant owns 100 feet of shoreline, the permit would allow a maximum mooring of one powerboat and one sailboat. Projects of this size would not require a Biological Opinion from the Service. Those wishing to construct more slips than allowed under General Permit SAJ-55, such as commercial marina developers, would still have to request an individual permit requiring a Biological Opinion from the Service. The provisions of General Permit SAJ-55 were developed by the Corps in close cooperation with the Florida Department of Natural Resources and the FWS Jacksonville Field Office.

* * *

The Choctawatchee beach mouse (*Peromyscus polionotus alloparys*) relocation

conducted in January by the FWS Jackson, Mississippi, Field Office appears to have been successful. Eight pairs were transferred to Grayton Beach State Recreation Area in Florida (four pairs from Shell Island on Tyndall Air Force Base and four from St. Andrews State Recreation Area). Alabama beach mice (*P. p. ammobates*) were trapped and marked at Bon Secour National Wildlife Refuge, Alabama, in an effort to survey numbers. The last trapping effort captured 29 individuals and the continued existence of Alabama beach mice on Gulf Shore Plantation was confirmed. A red fox (*Vulpes vulpes*) was trapped at Fort Morgan, Alabama, and fitted with a transmitter to study movements of this beach mouse predator.

* * *

Region 6 — The Montana Black-footed Ferret Working Group met in Billings, Montana, on January 27, 1987. The agenda included discussion on prioritization of potential reintroduction sites in Montana, cooperation with the Wyoming black-footed ferret (*Mustela nigripes*) program, completion of prairie dog management guidelines, and future tasks for ferret recovery in Montana.

After a recent snowstorm, biologists found the tracks of a 4-year-old male black-footed ferret near Meefeetsee, Wyoming, that they have been trying to capture since last September. Biologists from the FWS and the Wyoming Game and Fish Department recently caught it and took it to Laramie, Wyoming, where it will undergo a quarantine period before being placed with the other 17 ferrets in the captive breeding program. This will be the oldest male at the captive breeding facility, which makes it an extremely valuable addition. It is the only male that researchers are confident has had breeding experience in past years, which increases the possibilities of success for captive breeding. The ferrets are currently in their breeding season, but it will be several months before results of this year's captive breeding efforts are known.

* * *

Due to low production of peregrine falcons (*Falco peregrinus*) at the Peregrine Fund's facility in Idaho, fewer birds were released in 1986. The following figures represent the number of birds hatched and percentage reaching independence in Region 6 States: Montana, 13 birds and 92 percent; Wyoming, 17 birds and 59 percent; Utah, 9 birds and 67 percent; and Colorado, 20 birds and 70 percent.

In Montana, two wild pairs of peregrines nested, producing five young. One wild pair in Wyoming produced three young. Successful breeding pairs in Utah increased from one pair in 1985 to four in 1986, producing seven young.

* * *

(continued on next page)



photo by Curtis Carley

Mexican wolf young in the captive propagation program.

Regional News

Continued from previous page

The FWS, Wyoming Game and Fish Department, and University of Wyoming hope to be able to fund a survey effort this year in an attempt to locate the Wyoming toad (*Bufo hemiophrys baxteri*), which is found within the Laramie Basin in Albany County, Wyoming. It is thought to be a relic species left as glaciers retreated. No toads were found in 1985 and 1986 surveys. If searchers are able to survey this year and succeed in locating toads, recovery strategy and actions for this Endangered amphibian must be developed and implemented as soon as possible.

* * *

FWS field offices in Colorado and Utah are beginning a 3-year study of lead contamination of bald eagles (*Haliaeetus leucocephalus*) in those States. The purpose of the study is to develop baseline contaminant levels to monitor the effectiveness of steel shot in reducing lead poisoning in eagles.

* * *

Region 8 (Research) — Approximately 50 Aleutian Canada geese (*Branta canadensis leucopareia*) were found dead at their wintering grounds near Los Banos, California, in January-February 1987. Avian cholera is suspected as the cause of death for most of these birds. Of the 11 that have been necropsied at the National Wildlife Health Center (NWHC), avian cholera was confirmed in nine geese and lead poisoning in two. This is the first time lead poisoning has been documented in this Endangered species.



FWS Photo

Aleutian Canada goose

A Mississippi sandhill crane (*Grus canadensis pulla*) was found injured at the Mississippi Sandhill Crane National Wildlife Refuge near Gautier, Mississippi, on January 13, 1987. The bird had been traumatized by other cranes. Despite supportive therapy by local veterinarians, refuge personnel, and eventual treatment at Patuxent Wildlife Research Center (PWRC), the crane never regained the ability to walk normally or rise on its own. It died February 12 at PWRC. Necropsy at NWHC revealed a tumor along the cervical vertebrae. This is the fourth tumor identified during necropsy of 15 free-flying Mississippi sandhill cranes. Tumors are rare in wild birds; a prevalence of 27 percent is highly unusual.

* * *

The last wild California condor, AC-9, was captured April 19 on the new Bitter Creek National Wildlife Refuge. Both this

bird and AC-5, which was captured February 27, were taken to the San Diego Wild Animal Park for addition to the captive breeding program.

California condors UN-1 and AC-4, a captive pair at the San Diego Wild Animal Park, have been making vigorous courtship displays to one another. Personnel at the park have observed up to five such displays in a single 2-hour period.

* * *

For the first time, the captive flock of Puerto Rican parrots (*Amazona vittata*) at Patuxent's Puerto Rico Research Station aviary has produced fertile eggs from more than two breeding pairs. A new (third) pair has formed and produced at least two fertile eggs. Egg laying began in the wild on February 18; three nests have already produced eggs. Two of these nests will be double-clutched to maximize egg production.

Buyer Beware!

Each year, more than 10 million Americans travel abroad, many of them to regions of the globe that support a flourishing trade in exotic birds and animals, fashionable jewelry and furs, and unique tropical plants. American globetrotters spend an estimated \$14 billion while traveling, much of it for souvenirs, curios, and other collectibles commonly fashioned from foreign wildlife and plants.

While some of these products are legal to import into the United States, many others run afoul of Federal and international laws protecting animals and plants that are facing extinction, even when sold legally in their country of origin. Often what begins as an enjoyable vacation ends with a bitter lesson as these illegal items are confiscated, leaving the traveler with nothing more than a depleted bankroll and a receipt for seized property.

The Fish and Wildlife Service (FWS), in cooperation with the World Wildlife Fund—U.S., has developed a new brochure alerting travelers to the pitfalls of buying wildlife products abroad. *Buyer Beware!* de-

scribes the animal and plant products that are most commonly sold in foreign countries and whose importation into the U.S. is illegal. It also explains the Federal and international laws and treaties under which the FWS seeks to stem the growing trade in illegal products and to promote the conservation of the world's endangered wildlife. Because of the complexity of regulations governing wildlife importations, *Buyer Beware!* advises travelers with specific questions about certain countries they will be visiting, or about the legality of importing certain products, to contact the FWS or the World Wildlife Fund well in advance of their trip to obtain more detailed information.

Single copies of the brochure are available free from the Publications Unit, U.S. Fish and Wildlife Service, Room 148, Matomic Building, 1717 H Street NW, Washington, DC 20240. Limited bulk quantities are being made available to travel agents and tour operators as a service to their customers. Requests should be sent on letterhead to the Office of Public Affairs, U.S. Fish and Wildlife Service, Room 3447, 18th and C Streets NW, Washington, DC 20240.

BULLETIN Available by Subscription

Although we would like to send the BULLETIN to everyone interested in endangered species, budgetary constraints make it necessary for us to limit general distribution to Federal and State agencies and official contacts of the Endangered Species Program. However, the BULLETIN is being reprinted and distributed to all others, on a non-profit subscription basis, by the University of Michigan. To subscribe, write to the *Endangered Species Technical Bulletin Reprint*, School of Natural Resources, University of Michigan, Ann Arbor, Michigan 48109-1115, or telephone 313 763-1312. The price for 12 monthly issues is \$15.00 (in Canada, \$18 US).

New Publications

Vida Silvestre Neotropical is a new journal, published biannually by the World Wildlife Fund, on wildlife and wildland research and management in the neotropics. It focuses on the conservation of endangered plant and animal species and their habitats, sustainable use management, control of pest species, maintenance of biological diversity, indigenous uses of wildlife, methods for designing protected area systems, and related topics. Feature articles, notes, and announcements are published in the language in which they were submitted: Spanish, Portuguese, or English. Requests for information about subscriptions and guidelines for submitting manuscripts should be addressed to Curtis Freese, Co-Editor, *Vida Silvestre Neotropical*, World Wildlife Fund, 1255 23rd Street, N.W., Washington, D.C. 20037.

Habitat Suitability Index Models: Bald Eagle (Breeding Season), developed by Allen Peterson, synthesizes habitat use information on this species into a framework appropriate for field application. It is scaled to produce an index value between 0.0 (unsuitable habitat) and 1.0 (optimum habitat). The index is based upon an analysis of four habitat variables: 1) lake size, 2) lake productivity, 3) amount of mature forest, and 4) amount of human disturbance. Single copies of the report are available free of charge from the Publications Clerk, National Ecology Center, U.S. Fish and Wildlife Service, 2627 Redwing Road, Fort Collins, Colorado 80526.

BOX SCORE OF LISTINGS/RECOVERY PLANS

Category	ENDANGERED			THREATENED			SPECIES* TOTAL	SPECIES HAVING PLANS
	U.S. Only	U.S. & Foreign	Foreign Only	U.S. Only	U.S. & Foreign	Foreign Only		
Mammals	26	20	242	5	0	22	315	23
Birds	61	16	141	3	2	0	223	55
Reptiles	8	6	60	10	4	13	101	21
Amphibians	5	0	8	3	0	0	16	6
Fishes	39	4	11	22	6	0	82	43
Snails	3	0	1	5	0	0	9	7
Clams	23	0	2	0	0	0	25	21
Crustaceans	4	0	0	1	0	0	5	1
Insects	8	0	0	5	0	0	13	12
Plants	119	6	1	26	3	2	157	54
TOTAL	296	52	466	80	15	37	946	243**

*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, Olive ridley sea turtle, leopard, and piping plover.

**More than one species may be covered by some plans, and a few species have more than one plan covering different parts of their ranges.

Number of Recovery Plans approved: 209

Number of species currently proposed for listing: 27 animals
30 plants

Number of Species with Critical Habitats determined: 96

Number of Cooperative Agreements signed with States: 47 fish & wildlife
26 plants

March 31, 1987

April 1987

Vol. XII No. 4

ENDANGERED SPECIES

Technical Bulletin

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

FIRST CLASS
POSTAGE AND FEES PAID
U.S. DEPARTMENT OF THE INTERIOR
PERMIT NO. G-77