



ENDANGERED SPECIES TECHNICAL BULLETIN

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

FLORIDA PANTHER POPULATION STUDIED

By Anne E. Shapiro
Endangered Species Biologist
Florida Game and Fresh Water
Fish Commission

Florida panther (*Felis concolor coryi*) investigations conducted by the Florida Game and Fresh Water Fish Commission since 1976 have confirmed the presence of at least one population of this subspecies in the Big Cypress/Everglades region. Perhaps only 20 Florida panthers remain, and probably all occur in this part of south Florida.

Initial State efforts included the establishment of a Florida Panther Record Clearing House, investigations into panther sightings and reports, and field searches. In 1980, the Commission proposed a pilot study to capture, radio-instrument, and monitor the movements of two panthers from the south Florida population in order to learn something about habitat preferences, home range sizes, and daily and seasonal activities. The proposal, based on the U.S. Fish and Wildlife Service's Florida Panther Recovery Team recommendations, was approved and is currently being supported, in part, by Federal funds made available through Section 6 of the Endangered Species Act of 1973.

In preparation for the eventual capture/instrumenting operation, a rigorous review of all research done on other subspecies of *Felis concolor* was conducted, and a capture and handling plan for the Florida subspecies was subsequently formulated. Dogs were chosen as the most efficient and practical means of capturing the cats, so the Commission employed the services of



Roy McBride, a professional mountain lion hunter from Texas. Mr. McBride brought along his six well-trained and highly specialized "cat dogs."

On February 10, 1981, a male Florida

panther was treed by the dogs in the Fakahatchee Strand, Collier County, tranquilized and equipped with a radio-collar. A second cat, also a male, was similarly captured in this same area on February 20. Both panthers are estimated to be between 10 and 12 years of age.

Preliminary monitoring indicates that one panther is ranging over approximately 45 square miles and the other cat over an area in excess of 75 square miles. Both animals will be monitored over the next year to analyze movements relative to various habitat types, prey species occurrence, and other factors. Next January, the two cats will be recaptured and the lithium batteries in their radio-collars will be replaced so that monitoring can continue. If all goes well, and funding and manpower levels permit, up to 10 additional adult panthers

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RECOVERY PLANNING—Part II

RECOVERY GUIDELINES ESTABLISHED

By Peter G. Poulos

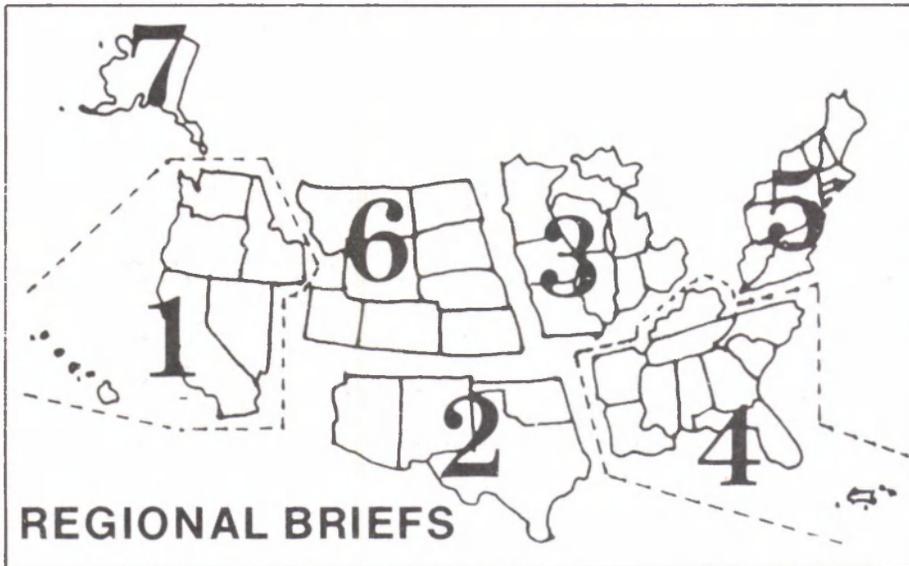
Increased emphasis on the recovery aspects of the Endangered Species Program has resulted in newly revised Recovery Planning Guidelines which were approved on April 21, 1981. These guidelines replace earlier ones which were approved in the Spring of 1979, in response to the Endangered Species Act Amendments of 1978 (see May 1979 BULLETIN).

Although recovery plan development

has been an important part of the Program since the enactment of the Endangered Species Act of 1973, recovery planning is specifically required by the 1978 amendments. Under the amendments, a recovery plan must be developed for every listed Endangered and Threatened species, except when the Secretary determines that "such a plan will not promote the conservation of the species."

The new guidelines, developed to bet-

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REGIONAL BRIEFS

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

Region 1. The Boise Area Office and the Nevada Department of Wildlife have made arrangements to investigate the

status of the desert tortoise (*Gopherus agassizii*) in Nevada.

A progress report from Idaho State University reveals that the Shoshone sculpin (*Cottus greeniei*), a native Idaho fish which was the subject of a Service

status review, was found at 17 of 29 sampling stations in the Hagerman Valley in southern Idaho. Continued work this summer will attempt to establish upstream and downstream edges of the species' distribution.

Work has begun on a joint effort to determine the status of four candidate plants in Nevada. The Air Force, Bureau of Land Management, and the Service have contributed funds for this project, conducted by seven botanists knowledgeable of Nevada flora.

Region 2. A previously undiscovered bald eagle (*Haliaeetus leucocephalus*) nest has been located in central Arizona. The nest, situated on a cliff overlooking a parking lot in a major recreational area, contains three fledglings.

The sea turtle sex determination research, conducted jointly by Rutgers University and the State University of New York at Buffalo, has been completed. A major finding was that incubation temperature has an effect on the gender of sea turtle hatchlings. Higher temperatures were found to produce more females.

Tropical depressions in the Gulf of Mexico have resulted in the loss of about 15 Kemp's Ridley sea turtle (*Lepidochelys kempii*) nests this season.

The red wolf (*Canis rufus*) captive breeding program in Tacoma, Washington, produced 6 litters totaling 25 pups this season, 9 males and 16 females. A pregnant female carrying nine pups died 10 days before whelping. Sue Behrns, the keeper, performed a Caesarean section on the dead female. Although there was no indication of a pulse or breathing in any of the pups, she was able to revive two of them. To date, 14 of the 25 born are still living.

Region 3. A scoping meeting for environmental assessment purposes on the Kirtland's Warbler Management Plan was held in Roscommon, Michigan.

The Eastern Timber Wolf Recovery Team met and determined what a viable population was and criteria for delisting. The team will offer its recommendations to the Service.

Region 4. The first injured manatees (*Trichechus manatus*) to be rehabilitated in captivity were returned to the wild in separate releases in April and June. The April release involved a cow that had injured a flipper after becoming entangled in a crab trap line, and also included her uninjured, but apparently dependent calf that had been kept with her in captivity. The two were held at Sea World of Florida during the rehabilitation period.

The June release involved a female that was rehabilitated at the Homosassa Springs tourist facility after being injured last year, presumably by a boat. Each release was made near the point of original capture.

The rehabilitation work at Sea World

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

F. Eugene Hester, *Acting Director*
(202-343-4717)

Ronald E. Lambertson
Associate Director and

Endangered Species Program Manager
(202-343-4646)

Harold J. O'Connor
Deputy Associate Director
(202-343-4646)

John L. Spinks, *Chief,*
Office of Endangered Species
(703-235-2771)

Richard Parsons, *Chief,*
Federal Wildlife Permit Office
(703-235-1937)

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

TECHNICAL BULLETIN STAFF
Clare Senecal Kearney, *Editor*
Morey Norkin, *Assistant Editor*
(703-235-2407)

Regional Offices

Region 1, Suite 1692, Lloyd 500 Bldg., 500 N.E. Multnomah St., Portland, OR 97232 (503-231-6118); R. Kahler Martinson, *Regional Director*; Edward B. Chamberlain, *Assistant Regional Director*; Phil Lehenbauer, *Acting Endangered Species Specialist*.

Region 2, P.O. Box 1306, Albuquerque, NM 87103 (505-766-2321); Jerry

Stegman, *Acting Regional Director*; Robert F. Stephens, *Assistant Regional Director*; Jack B. Woody, *Endangered Species Specialist*.

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

Region 4, Richard B. Russell Federal Bldg., 75 Spring St., S.W., Atlanta, GA 30303 (404-221-3583); Walter O. Stieglitz, *Acting Regional Director*; Alex B. Montgomery, *Acting Assistant Regional Director*; Kenneth Chitwood, *Acting Endangered Species Specialist*.

Region 5, Suite 700, One Gateway Center, Newton Corner, MA 02158 (617-965-5100); Howard Larsen, *Regional Director*; Gordon T. Nightingale, *Assistant Regional Director*; Paul Nickerson, *Endangered Species Specialist*.

Region 6, P.O. Box 25486, Denver Federal Center, Denver, CO 80225 (303-234-2209); Don W. Minnich, *Regional Director*; Charles E. Lane, *Assistant Regional Director*; Don Rodgers, *Endangered Species Specialist*.

Region 7, 1101 E. Tudor Rd., Anchorage, AK 99503 (907-276-3800, ext. 495); Keith M. Schreiner, *Regional Director*; Jon Nelson, *Ass't Regional Director*; Dan Benfield, *Endangered Species Specialist*.

U.S. Fish and Wildlife Regions

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

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was handled through a cooperative agreement which included limited Federal funding. At Homosassa Springs, however, the services were provided strictly as a matter of private interest in manatee conservation.

Region 5. A nesting pair of peregrine falcons (*Falco peregrinus anatum*) was discovered in the White Mountains of New Hampshire. The female is believed to be a bird that was hacked from a nearby site in 1978. Two young birds were also in the nest. They have been banded and are expected to fledge soon. This marks the first known nesting of peregrines in the eastern mountains since the birds disappeared in the 1950's.

A report on the Rare and Endangered Vascular Plants of West Virginia is available from the Newton Corner Regional Office. Also available, in limited

supply, are copies of the Delaware plant report.

Region 6. Black-footed ferret (*Mustela nigripes*) sighting reports started this year in May and have continued at a good pace into June. Reports have come in from Butte County, South Dakota; Uinta County, Wyoming; Goshen County, Wyoming; Moffat County, Colorado; and Lyman County, South Dakota. The sightings were classified as one confirmed, two probable, and two unconfirmed.

The Wood Buffalo-Aransas whooping crane (*Grus americana*) flock is monitored each spring and fall during migration. According to the Service's Pierre Area Office, which accumulates the sightings, 47 confirmed and probable sightings were made in the fall of 1980. Recorded observations of migrant whoopers began on September

9 in Canada and October 10 in the U.S. The last sighting was made on November 7. Sightings were reported from Saskatchewan (26), North Dakota (7), South Dakota (5), Nebraska (3), Kansas (2), and Oklahoma (4).

"Guidelines for Determining Grizzly Bear Nuisance Status and Controlling Nuisance Grizzly Bears in the Northern Continental Divide and Cabinet—Yaak Grizzly Bear Ecosystems" have been developed. A cooperative effort involving the Montana Department of Fish, Wildlife and Parks, National Park Service, U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, and the Fish and Wildlife Service, the guidelines outline operational procedures for handling nuisance bears and stipulate that acceptable release sites will be designated before the "nuisance bear season" begins.

NEW PUBLICATIONS

The Rare Vascular Plants of the Yukon, Syllogeus No. 28, was recently published by the National Museum of Natural Sciences, Canada. For each of the 313 rare plants covered in the publication, distributed in the Yukon and elsewhere, habitat, and status are among the data provided. Copies are available from the National Sciences, Ottawa, Canada K1A 0M8.

The Council on Environmental Quality has compiled *A Summary of the Legal Authorities for Conserving Wild Plants*. This may be the most comprehensive document of its type ever assembled. Included is a listing of State conservation and protection laws, each one accompanied by a chart indicating the nature of the law and references to lists of plants protected. An official State contact is also listed as a source for new or additional information. Copies will eventually be available from the National Technical Information Service in Springfield, Virginia.

The Proceedings of the Iowa Academy of Science, March 1981, contains the first complete listing of Iowa vertebrate species, with notes as to the status of each. The *Proceedings* are papers presented at a symposium on Perspectives on Iowa's Declining Flora and Fauna. Copies of this publication are available for \$3.00 from the Executive Director, Iowa Academy of Science, University of Northern Iowa, Cedar Falls, Iowa 50613.

Copies of *Understanding Predation and Northeastern Birds of Prey* are available from the New York Cooperative Extension Distribution Center, 7 Research Park, Cornell University, Ithaca, New York, at \$4.00 each.

This publication explores predation, the life history and ecology of birds of prey, and gives species accounts and color il-

lustrations of each of the birds of prey found in the northeast, including those that are endangered.

This panther, treed and radio-collared in February, will be recaptured next January to replace the lithium batteries which power the attached radio monitoring unit.



Florida Game and Fresh Water Fish Commission Photograph

FLORIDA PANTHER

Continued from Page 1

may be captured, radio-instrumented, and monitored in 1982.

The Florida panther has been protected from hunting in Florida since 1958 and was listed as Endangered by the Service in 1967. Even so, man-related activities continue to take their toll on what few remain. A Florida panther was illegally shot in the Big Cypress area in

1978. In 1980, two panthers, a male and a female, were killed by cars in separate incidents on Highway 29 in the same part of the State. Most recently while returning from monitoring his two radio-instrumented cats at 10:00 p.m. on Easter Sunday 1981, R. Chris Belden, the Commission biologist and Florida Panther Recovery Team Leader in charge of the study, found yet another road-killed panther on Highway 29. It was an 84½ pound female, pregnant with four kittens.

RECOVERY PLANNING

Continued from page 1

ter implement the 1978 legislation, were completed to standardize plan format, to improve efficiency in tracking recovery actions, and to reflect the increased utilization of recovery plans in the budget review process. These guidelines are now being used by all the Service's regional offices in preparing recovery plans; and all plans that were approved under the old format are being reviewed to comply with the new guidelines.

Recovery plans are the cornerstone of the Service's efforts to reclassify and deregulate listed species; they also serve as a means to coordinate the various programs of different agencies and organizations which have conservation responsibilities under the Act. Plans serve as a basis for the budgeting process of the Service and other agencies, and may include such activities as land acquisition, research, habitat manipulation, or law enforcement.

According to the new guidelines, regional offices (under the guidance of Regional Directors) are responsible for the development of recovery plans and the subsequent implementation of the recovery tasks described in the plan. Regional planning responsibility is designated after a species is listed.

When a species' range is entirely within a single regional boundary, that region has responsibility for planning. However, when a species' range crosses regional boundaries, the Director designates a lead region for recovery plan development.

An article in the May 1981 BULLETIN describes the procedure followed by Region 5 to develop the Plymouth Red-bellied Turtle Recovery Plan. The story illustrates, in general, the procedures which are followed in the development of all recovery plans, and describes, in particular, a plan which involves a species whose range is entirely within a single region. Other plans, however, will require more complex development when subject species have a wide geographic distribution, have many threats to their survival, and require large numbers of agencies to be involved in their conservation.

PLAN PREPARATION

The lead region for each plan has several development options to select from. Plans may be developed:

- by the U.S. Fish and Wildlife Service;
- by a recovery team;
- by an individual, committee, or group on a volunteer or contractual basis;
- by a State; or

APPROVED RECOVERY PLANS:

Lead Region

Aleutian Canada goose	<i>Branta canadensis leucopareia</i>	7
American crocodile	<i>Crocodylus acutus</i>	4
Antioch Dunes (3 species)		
Antioch Dunes evening primrose	<i>Oenothera deltooides</i> ssp. <i>howellii</i>	1
Contra Costa wallflower	<i>Erysimum vapatatum</i> var. <i>angustatum</i>	1
Lange's metalmark butterfly	<i>Apodemia mormo langei</i>	1
Arizona trout	<i>Salmo apache</i>	2
Black-footed ferret	<i>Mustela nigripes</i>	6
Blue pike	<i>Stizostedion vitreum glaucum</i>	3
Blunt-nosed leopard lizard	<i>Crotaphytus silus</i>	1
California condor	<i>Gymnogyps californianus</i>	1
California least tern	<i>Sterna albifrons browni</i>	1
Colorado River squawfish	<i>Ptychocheilus lucius</i>	6
Columbian white-tailed deer	<i>Odocoileus virginianus leucurus</i>	1
Cui-uj	<i>Chasmistes cujus</i>	1
Delmarva Peninsula fox squirrel	<i>Sciurus niger cinereus</i>	5
Devil's Hole pupfish	<i>Cyprinodon diabolis</i>	1
Dusky seaside sparrow	<i>Ammospiza maritima nigrescens</i>	4
Eastern brown pelican	<i>Pelecanus occidentalis carolinensis</i>	4
Eastern timber wolf	<i>Canis lupus lycaon</i>	3
Gila trout	<i>Salmo gilae</i>	2
Greenback cutthroat trout	<i>Salmo clarki stomias</i>	6
Hawaiian waterbirds (3 species)		
Hawaiian coot	<i>Fulica americana alai</i>	1
Hawaiian gallinule	<i>Gallinula chloropus sandvicensis</i>	1
Hawaiian stilt	<i>Himantopus himantopus knudseni</i>	1
Humpback chub	<i>Gila cypha</i>	6
Indiana bat	<i>Myotis sodalis</i>	3
Key deer	<i>Odocoileus virginianus clavium</i>	4
Kirtland's warbler	<i>Dendroica kirtlandii</i>	3
Light-footed clapper rail	<i>Rallus longirostris levipes</i>	1
Masked bobwhite (quail)	<i>Colinus virginianus ridgwayi</i>	2
Mississippi sandhill crane (revised)	<i>Grus canadensis pulla</i>	4
Northern Rocky Mountain wolf	<i>Canis lupus irremotus</i>	6
Palila (honeycreeper)	<i>Psittirostra bailleui</i>	1
Pahrump killifish	<i>Empetrichthyis latos</i>	1
Peregrine falcon (eastern population)	<i>Falco peregrinus anatum</i>	5
Peregrine falcon (Rocky Mountain-Southwest population)	<i>Falco peregrinus anatum</i>	6
Plymouth red-bellied turtle	<i>Chrysomys (= Pseudemys) rubriventris bangsi</i>	5
Red-cockaded woodpecker	<i>Picoides (= Dendrocopos) borealis</i>	4
Santa Cruz long-toed salamander	<i>Ambystoma macrodactylum croceum</i>	1
Unarmored threespine stickleback	<i>Gasterosteus aculeatus williamsoni</i>	1
Warm Springs pupfish	<i>Cyprinodon nevadensis pectoralis</i>	1
Watercress darter	<i>Etheostoma nuchale</i>	4

- by another Federal agency.

Factors determining the planning method selected include the range of the species, the complexity of the recovery actions contemplated, the number of organizations responsible for the implementation of the actions, the availability of personnel, and the expertise of the personnel utilized.

RECOVERY PLAN FORMAT

The new guidelines organize recovery plans in three parts:

1) Introduction: Background material on habitat requirements, population limiting factors, past and current distribution status, and conservation efforts,

APPROVED RECOVERY PLANS:

Lead Region

West Indian (Florida) manatee (being revised)	<i>Trichechus manatus</i>	4
Whooping crane	<i>Grus americana</i>	2
Woundfin	<i>Plagopterus argentissimus</i>	2

DRAFT RECOVERY PLANS:

Lead Region

American alligator	<i>Alligator mississippiensis</i>	4
Attwaler's greater prairie chicken	<i>Tympanuchus cupido attwateri</i>	2
Bald eagle (southwest population)	<i>Haliaeetus leucocephalus</i>	2
Bald eagle (Chesapeake Bay population)	<i>Haliaeetus leucocephalus</i>	5
Big Island forest birds (4 species)		
Akipolauu (honeycreeper)	<i>Hemignathus wilsoni</i>	1
Hawaiian akepa (honeycreeper)	<i>Loxops coccinea coccinea</i>	1
Hawaiian creeper	<i>Loxops maculata mana</i>	1
Ou (honeycreeper)	<i>Psittirostra psittacea</i>	1
Clay phacelia	<i>Phacelia formulosa</i>	6
Clear Greek gambusia	<i>Gambusia heterochir</i>	2
Comanche Springs pupfish	<i>Cyprinodon elegans</i>	2
Desert slender salamander	<i>Batrachoseps aridus</i>	1
Eastern cougar	<i>Felis concolor cougar</i>	4
Eastern indigo snake	<i>Drymarchon corais couperi</i>	4
El Segundo blue butterfly	<i>Euphilotes (= Shijimiaeooides) battoides allyni</i>	1
Eureka Valley Dunes (2 species)		
Eureka Dune grass	<i>Swallenia alexandrae</i>	1
Eureka evening primrose	<i>Oenothera avita spp. eurekaensis</i>	1
Everglade kite (snail kite)	<i>Rostrhamus sociabilis plumbeus</i>	4
Florida panther	<i>Felis concolor coryi</i>	4
Gray bat	<i>Myotis grisescens</i>	3
Grizzly bear	<i>Ursus arctos horribilis</i>	6
Leatherback sea turtle	<i>Dermochelys coriacea</i>	4
Maryland darter	<i>Etheostoma sellare</i>	5
McDonald's rock-cress	<i>Arabis mcdonaldiana</i>	1
Moapa dace	<i>Moapa coriacea</i>	1
Morro Bay kangaroo rat	<i>Dipodomys heermanni</i>	1
Northern wild monkshood	<i>Aconitum noveboracense</i>	3
Okaloosa darter	<i>Etheostoma okaloosae</i>	4
Oregon silverspot butterfly	<i>Speyeria zerene hippolyta</i>	1
Peregrine falcon (Alaska population)		
Arctic peregrine falcon	<i>Falco peregrinus tundrius</i>	7
American peregrine falcon	<i>Falco peregrinus anatum</i>	7
Peregrine falcon (Pacific population)	<i>Falco peregrinus anatum</i>	1
Puerto Rican parrot	<i>Amazona vittata</i>	4
Puerto Rican plain pigeon	<i>Columba inornata wetmorei</i>	4
Red wolf	<i>Canis rufus</i>	4
San Diego mesa mint	<i>Pogogyne abramsii</i>	1
Schaus swallowtail (2 species)		
Schaus swallowtail butterfly	<i>Papilio aristodemus ponceanus</i>	4
Bahaman swallowtail butterfly	<i>Papilio andraemon bonhotei</i>	4
Snail darter	<i>Percina tanasi</i>	4
Socorro isopod	<i>Exosphaeroma thermophilus</i>	2
Sonoran pronghorn	<i>Antilocapra americana sonoriensis</i>	2
Southern sea otter	<i>Enhydra lutris nereis</i>	1
Utah prairie dog	<i>Cynomys parvidens</i>	6
Virginia round-leaf birch	<i>Betula uber</i>	5
Yaqui topminnow	<i>Poeciliopsis occidentalis sonoriensis</i>	2
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	2

as well as threats to the species that have resulted in its Endangered or Threatened status, are discussed in this section.

2) Recovery: The primary objective of the plan, including the parameters which need to be achieved before the species can be considered "recovered," is stated in this section. The steps to be taken for

the recovery of the species are identified in a step-down outline format, followed by a narrative providing details and describing the projects and studies listed in it. The step-down outline attempts to identify long-range as well as more immediate goals leading to the recovery of the organism. Any recommendation for the protection of essential

habitat will also be specifically identified at this time, if possible.

3) Implementation Schedule: This section specifically identifies organization or agency assignments, priorities, and funding required to accomplish the tasks described in the step-down outline. Schedules are developed to the extent justified by available information or to identify initial research needs. The first phase of the Implementation Schedule identifies recovery tasks for the first 3 to 5-year period of the plan. Such tasks could include a listing of known recovery actions and some information gathering objectives such as status surveys, habitat requirement studies, and the development of interim management plans. The next phase is developed to include new data obtained during the implementation of the first phase and identifies additional actions and studies that are needed for continued recovery. Schedules will be continually revised and updated as recovery tasks are accomplished.

KEY SECTION

The Implementation Schedule, the most important part of the recovery plan, is the detailed "working" section used in tracking accomplishments and providing the basis for the funding of recovery actions for listed species. Each phase of the implementation portion of the plan is modified continually to reflect changes and "fine tuning" necessary to meet the primary objective of the plan.

Because the implementation schedule becomes the focus of all Service activities involved in the recovery of the species, it is mandatory that all recovery tasks be identified in the plan as specifically as possible. The review of permit applications, Section 7 consultations, unsolicited research proposals, State Federal Aid proposals, and all other funding requests are examined against the Implementation Schedule. If the permit, consultation, or proposal can be identified with a specific task in the Implementation Schedule, the review process will be expedited and the likelihood of approving and funding the proposal will be increased.

Implementation Schedules are prepared in a standardized format. The most critical components of the schedule are the priorities assigned to each recovery task.

Recovery tasks are assigned priorities based on the following:

Priority 1—All actions that are absolutely essential to prevent extinction of the species.

Example: Peregrine falcon law enforcement to prevent taking.

Priority 2—All actions necessary to maintain the species' current population status.

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CITES NEWS

June 1981

The Service's Office of the Scientific Authority (OSA)—replacing the Endangered Species Scientific Authority (ESSA)—functions as staff to the U.S. Scientific Authority for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). OSA reviews applications to export and import species protected under the Convention, monitors their trade, reviews the status of wild animals and plants impacted by trade, makes certain findings concerning housing and care of protected specimens, and advises on trade controls.

TEN YEAR REVIEW OF CITES SPECIES INITIATED

A notice of a 10-year review of species listed in the CITES appendices was published by the Service (FR 6/30/81), implementing a resolution made by the Conference of the Parties to CITES at their recent meeting in New Delhi, India. The notice invites both trade and biological information from the public concerning the status of listed species that are native to North America (i.e. those having natural resident populations in North America).

The Service's review of listed species will also include any species with resident populations in the following areas for which the United States has international responsibility: Puerto Rico, Guam, the Virgin Islands of the United States, American Samoa, Midway Islands, Wake Island, Johnston Atoll, Palmyra Atoll, Kingman Reef, Howland Island, Baker Island, Jarvis Island, and Navassa Island. A list of species in Appendices I and II that are included in the North American regional review, as well as copies of criteria previously adopted by the Parties for amendments to Appendices I and II, may be obtained by contacting the Office of the Scientific Authority, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone (202/653-5948). Comments concerning the notice should be sent to the same address by November 15, 1981.

The Service intends to follow this schedule for implementing the review:

November 15, 1981—Deadline for receipt of information on species from the public.

February 1, 1982—Publication of *Federal Register* notice to announce species for which the Service will submit draft proposals to the CITES Central

Committee, and to invite public comment on these proposals.

Between April and June 1982—Review by CITES Central Committee.

September 20, 1982—Publication of *Federal Register* notice to announce the Service's final decisions on proposals to

be submitted for adoption by the Parties; submission of proposals to the CITES Secretariat.

February or March 1983—Fourth Meeting of the Conference of the Parties, at which proposals will be considered for adoption.

Rulemaking Actions

June 1981

EFFECTIVE DATES EXTENDED

The effective dates of four final U.S. Fish and Wildlife Service rules have been deferred to July 31, 1981 (FR 6/29/81). The affected rules relate to a genus of Hawaiian tree snails (*Achatinella*); Texas poppy-mallow (*Callirhoe scabriuscula*); gypsum wild buckwheat (*Eriogonum gypsophilum*); and Todsen's pennyroyal (*Hedeoma todsenii*), all of which appeared as final rules in the *Federal Register* during January 1981.

The Department of the Interior is deferring the effective dates of these species to permit reconsideration of the rules to determine whether they are major under Executive Order 12291. Written comments should be sent to the Office of Endangered Species, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240. Comments must be received on or before July 17, 1981.

REDEFINITION OF HARM PROPOSED

The Office of the Solicitor (Department of the Interior) has proposed redefinition of the term "harm" which occurs in Section 9 of the Endangered Species Act of 1973 (FR 6/2/81). Section 9 makes it illegal to "take" an Endangered or Threatened wildlife species; "harm" is one of ten terms listed in this section as "taking" actions.

The U.S. Fish and Wildlife Service's implementing regulations (16 U.S.C. 1531 [19]) now include within the definition of "harm" any significant environmental modification or degradation that disrupts behavior patterns of listed animals, regardless of whether an actual killing or injuring of listed species of wildlife is demonstrated. The proposal recommends limiting the definition of

"harm" to mean only an act or omission which actually injures or kills wildlife.

There has never been a prosecution initiated by the Service under the present definition and the Department does not expect the redefinition to have any significant effect on future enforcement actions or strategy. Comments on this proposed rule must be submitted to the Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240, on or before August 3, 1981.

PETITION TO LIST WIEST'S SPHINX MOTH ACCEPTED

A petition to list the Wiest's sphinx moth (*Euproserpinus wiesti*) has been accepted by the U.S. Fish and Wildlife Service (F.R. 6/26/81). The supporting data were submitted by Dr. Karolis Bagdonas of the University of Wyoming.

The Wiest's sphinx moth has been collected at only two sites, Weld County in northeastern Colorado and near Albuquerque, New Mexico. It has not been collected in the Albuquerque area since the 1950's; however, it was rediscovered in Colorado in 1979.

Studies by Dr. Bagdonas found that 200-300 adult moths were present in the Colorado habitat during the flight season in 1979, but only 40-50 individuals were seen in 1980. Recent pesticide spraying for grasshopper control accidentally affected the site, killing most of the moth larvae being studied by Dr. Bagdonas and his students. It is believed that some of the larvae had entered the soil and pupated prior to the spraying, thus escaping its effects. Dr. Bagdonas has obtained funding from the World Wildlife Fund to continue studies on the species in the summer of 1981.

Comments on this notice should be submitted on or before September 24, 1981, to the Director (OES), U.S. Fish and Wildlife Service, Washington, D.C. 20240.

ARMY CORPS OF ENGINEERS SPONSORS MUSSEL RESEARCH

The U.S. Army Engineer Waterways Experiment Station (WES) in Vicksburg, Mississippi, is currently working on a 2-year project to expand the Corps of Engineers' knowledge of mussels, especially endangered and potentially endangered species. The research effort is headed by Dr. Andrew Miller of the Environmental Laboratory's Waterway Habitat and Monitoring Group at WES.

Of special concern to the Corps are five mussel species which were subjects of a notice of review published last year by the U.S. Fish and Wildlife Service (see May 1980 BULLETIN). All of these mussels have been found in a 100-mile stretch of the Tombigbee River from Fulton, Mississippi, to Gainesville, Alabama. Parts of this stretch will become run-of-the-river reservoirs under the Tennessee-Tombigbee Waterway Project plans.

Mussels need flowing water to bring food and carry away waste. Many

species seem to prefer running water and gravel bottom habitat. But because of the Tennessee-Tombigbee project, water levels and flow, and sedimentation rate have or will be changed in much of the river. Therefore, mussels in some areas may be smothered by silt that settles in the calmer waters. In addition, maintenance dredging, necessary when the project is operated, poses a potential threat to the species.

Miller hopes that the Corps can counter the possible loss of present mussel habitat with the creation of man-made bars. These bars would be constructed by dumping large amounts of gravel off barges at specified sites, and then relocating mussel populations onto the bars. These bars would also have to be maintained for at least part of the year to reduce sediment accumulation.

If the mussels are relocated successfully onto the man-made bars, Miller plans further monitoring of the mussels

to see if they adapt and reproduce normally. While mussels have been relocated to new sites before, this would be the first time a man-made site would be used.

Other objectives of the WES mussel project include the development of a field handbook on endangered mussels, a thorough listing of outside consultants whom Federal biologists can contact with specific mussel problems, and a listing of various mussel collections at universities and museums. A computerized search and retrieval system for literature pertaining to mussels, another aspect of the project, is now operational. Millers' project also will gather and spread information on mussel sampling techniques and equipment.

Miller organized a workshop on endangered freshwater mollusks, the first of its kind to be hosted by the Corps, which was conducted at WES on May 19-20, 1981. Over 50 attendees from various Corps elements, universities, Federal agencies, museums, and private concerns were present. A second endangered mollusk workshop is being planned.

SEA TURTLE ACTIVITY ON REFUGES REPORTED

Fifteen National Wildlife Refuges (NWR) conducted surveillance, management, and protection activities for sea turtles during 1980. The accompanying chart summarizes this work which was primarily related to the loggerhead turtle (*Caretta caretta*). A much smaller amount of data was collected on the green sea turtle (*Chelonia mydas*) while only incidental information on the Kemp's ridley sea turtle (*Lepidochelys kempii*) was reported.

Most of the work reported in the summary chart was conducted by refuge personnel and holders of special research permits. Participating refuges are located in Virginia, North Carolina, South Carolina, Georgia, Florida, and Louisiana.

A National Marine Fisheries Service (NMFS)/Fish and Wildlife Service (FWS) jointly sponsored southeastern aerial survey of marine turtle nesting activity was initiated in 1980. Employees on Pea Island, Cape Romain, Blackbeard Island, Wassaw Island, Hobe Sound, Merritt Island, Ding Darling, Egmont Key, and St. Vincent NRWs participated in ground-truthing surveys during the 1980 aerial surveys.

There was an unusually high incidence of dead sea turtles washing onto beaches in 1980, particularly in Virginia, South Carolina, Georgia, and Florida. These deaths were thought to be closely associated with pound net fishing in Virginia, sturgeon netting in South Carolina, and shrimp trawling later in the summer in South Carolina and Georgia. Over 1,800 sea turtles were recorded as found stranded on the beaches of

southeast through a newly instituted Sea Turtle Stranding — Salvage Network cooperatively funded and administered by

NMFS, FWS and the Smithsonian Institute's Scientific Event Network. Many refuge employees cooperated in this new venture.

SEA TURTLE MONITORING RESULTS ON 15 U.S. FISH AND WILDLIFE SERVICE NATIONAL WILDLIFE REFUGES—1980

Refuge	Beaches		Nesting Activity ²			Nest Losses		Hatched / Nests Screened	Stranded	Tagged	
	Total Miles	Miles Surveyed	Total Nests	Succ. Nests	Hatchlings	Tide Loss	Pred. Loss				
Chincoteague	11	9	0	0	0	0	0	No	0	1	0
Fisherman Isl.	2	1	0	0	0	0	0	No	0	11	0
Back Bay	4	4	1	1	104	0	0	No	1	17 ^a	0
Pea Island	12 ^a	12 ^a	12	8	538	2	0	Yes	0	21	0
Cape Romain	21	17	1,191	710	67,753	383	95	Yes	15	42	0
Wassaw Island	7	5 ^b	50	48	4,338	0	1	Yes	5	55	44
Blackbeard Isl.	8	5	124	119	11,106	2	3	Yes	57	50	0
Merritt Island ^b	6	6	468	346	26,746	9	113	Yes	0	1	141
Hobe Sound ^b	3 ^b	3 ^b	1,104	1,069	86,540	35	20	No	0	2	0
Key Deer	2 ^a	2 ^a	0	0	0	0	0	No	0	1	0
Ding Darling	1	1	4	4	480	0	0	No	0	0	0
Egmont Key	3	3	5	4	600	1	0	No	0	1	0
Chassanowitzka	3	3	0	0	0	0	0	No	0	0	0
St. Vincent	12	7	8	3	92	3	2	No	6	13	0
Delta Breton ^a	60	60	0	0	0	0	0	No	0	1	0
Totals Loggerhead	156 ^b	140	2,967	2,312	198,297	435	234	—	84	216 ^a	185
Green			40	38	3,173				13		4
Combined			3,007	2,350	201,470				97		189
Percentage Diff's 1979 to 1980	-1.2	+63.4	-13.0	+53.1	+47.1	-52.7	-75.6	—	37.0	+173.4	-43.4

a—includes one Ridley

b—loggerhead data above and green below

(1) Delta-Breton in Louisiana reported the largest amount of available beach. This area was checked only three times during the summer, however, yielding no turtle activity except one stranding.

(2) Total successful nests in 1980 were 815 higher than in 1979 (+53.1%) even though the total nests laid were 13% fewer. Reduced losses were attributable to lower predation and to more amenable weather in 1980. The resultant hatching total thus was a substantial increase from the previous year.

RECOVERY PLANNING

Continued from page 5

Example: Maintaining existing peregrine falcon nest sites.

Priority 3—All other actions necessary to provide for full recovery of the species.

Example: Establishing new peregrine falcon nest sites.

RECOVERY PLAN REVIEW

After preparation, the recovery plan is subjected to three separate reviews. The first draft is given a "technical review." This review concentrates on the biological and ecological considerations identified in the plan. Comments from the technical review are incorporated into the draft by the regional office. The next draft is the "agency review."

The agency review allows for comments by all cooperating agencies on any tasks or activities in which they are expected to participate. After comments from the agency review are incorporated into the draft, it is given a "final" review and sent to the Service's Director.

After the Director's approval, the plan is returned to the regional office for printing and distribution. The Regional Director then initiates the implementation of recovery activities.

CURRENT STATUS

At the present time there are 41 approved recovery plans to be revised un-

BOX SCORE OF SPECIES LISTINGS

Category	ENDANGERED			THREATENED			SPECIES TOTAL
	U.S. Only	U.S. & Foreign	Foreign Only	U.S. Only	U.S. & Foreign	Foreign Only	
Mammals	15	17	224	3	0	21	280
Birds	52	14	144	3	0	0	213
Reptiles	7	6	55	8	4	0	80
Amphibians	5	0	8	3	0	0	16
Fishes	29	4	11	12	0	0	56
Snails	2	0	1	5	0	0	8
Clams	23	0	2	0	0	0	25
Crustaceans	1	0	0	0	0	0	1
Insects	7	0	0	4	2	0	13
Plants	48	2	0	7	1	2	60
TOTAL	189	43	445	45	7	23	752

* Separate populations of a species, listed both as Endangered and Threatened, are tallied twice. Species which are thus accounted for are the gray wolf, bald eagle, American alligator, green sea turtle, and Olive ridley sea turtle.

Number of species currently proposed: 18 animals
11 plants

Number of Critical Habitats listed: 48
Number of Recovery Teams appointed: 68
Number of Recovery Plans approved: 41
Number of Cooperative Agreements signed with States:
38 fish & wildlife
10 plants

June 30, 1981

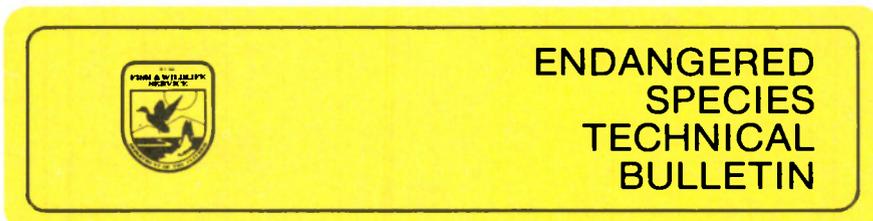
der the new guidelines. Also, there are 36 draft plans in the technical and agency review stages. (See list of approved and draft plans in this issue.)

Copies of each final recovery plan are available to the general public upon re-

quest from the Fish and Wildlife Reference Service in Denver, Colorado.

For price information write:

Fish and Wildlife Reference Service
3840 York Street, Unit I
Denver, Colorado 80205



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



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