

ENDANGERED SPECIES

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

Recovery Plan for Virginia Round-leaf Birch is Approved

The Virginia Round-leaf Birch Recovery Plan was signed March 3, 1982, marking the first time such a plan has been approved by the Fish and Wildlife Service (FWS) for a listed plant. Prepared under contract by Terry L. Sharik, School of Forestry and Wildlife Resources, Virginia Polytechnic Institute and State University (VPI & SU), the document is expected to serve as a guide when there are other plants with similar recovery needs in the future.

Background

The Virginia round-leaf birch (*Betula uber*) is known from a single population in Smyth County, southwestern Virginia. It was originally discovered by W. W. Ashe in 1914, but attempts to relocate the birch during the 1950's and 1960's were unsuccessful. Later, in 1974, Peter Mazzeo of the National Arboretum rekindled interest in *B. uber* after discovering an undated herbarium specimen collected by H. B. Ayers. Mazzeo's reports prompted a local biologist, D. W. Ogle, to conduct a new search for the birch and, in 1975, the species was rediscovered along the banks of Cressy Creek. It was listed as Endangered in 1978.

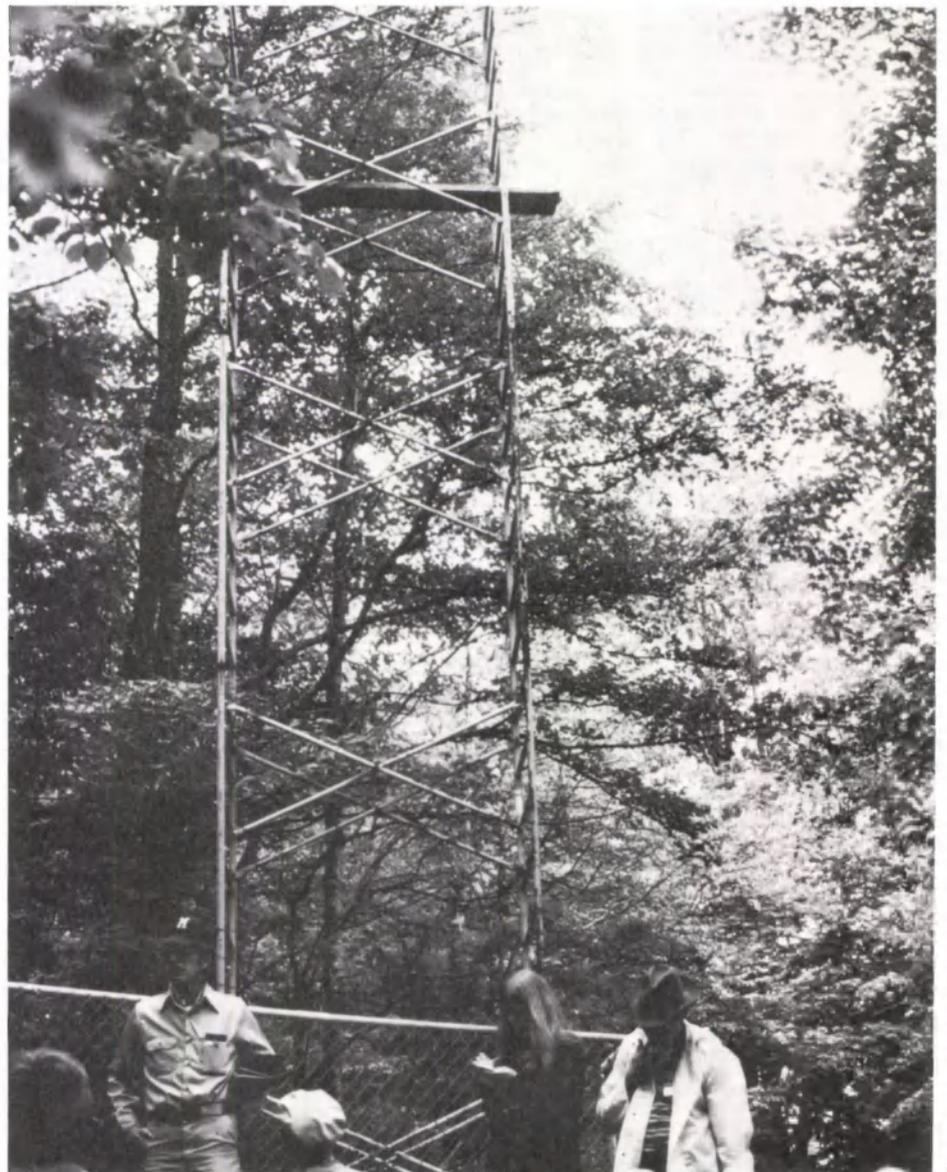
Subsequent surveys located at least 40 individuals of *B. uber*. Despite several intensive searches since 1975 of Cressy Creek and adjacent watersheds, no additional populations or individuals have been found. As of July 1980, 20 individuals remained along the creek, with no new recruitment to the population since before 1975. Factors in this decrease include removal of seedlings for cultivation elsewhere, other human activities, and natural causes. The remaining trees along the creek exhibit various degrees of reduced vigor due to a combination of natural factors (primarily overtopping by other trees) and human activities (stress from overcollection of material for research and propagation purposes).

Early Conservation Efforts

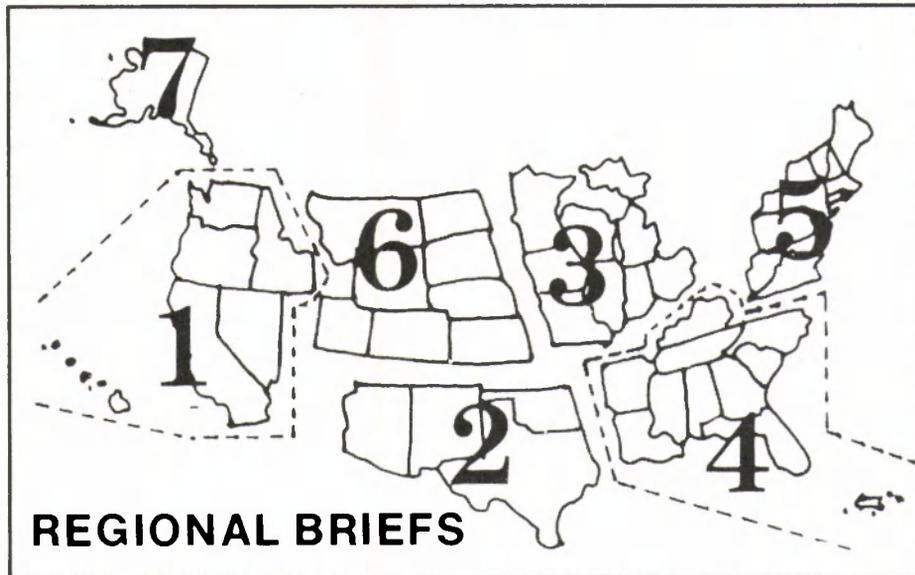
The round-leaf birch population is lo-

cated on three adjacent properties. In 1976, the two private landowners erected high fences around their segments of the population. Later that year, the U.S. Forest Service (UFS) wrote a

plan to protect the two trees (including the largest individual of *B. uber* known) located in the Mount Rogers National Recreation Area, Jefferson National
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Scaffolding was erected next to this *Betula uber* individual, allowing researchers to gather pollen and other materials for laboratory study.



REGIONAL BRIEFS

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

Region 1—On March 10, two defendants were each given a \$1,600 fine, a 1-year suspended sentence, and 300

hours of community service in a Los Angeles court for shooting a bald eagle (*Haliaeetus leucocephalus*). The bald eagle in question was part of a program to reintroduce the species to Santa Catalina Island in the Southern California

Bight. Eagle chicks removed from nests in the Northwest are fledged at hack sites on the island.

Between 50 and 75 bald eagles were observed on the Ft. Lewis Military Reservation along the lower Nisqually River north of Olympia, Washington, in February. This is an unprecedented high count, partially attributable to a reduced food supply (salmon) on other river systems to the north and an unusually large return of chum salmon in the Nisqually system. Service efforts in this area are increasing in response to the expanding eagle population and the increased pressure on the resources from commercial fishing interests and military activities.

The Service has allocated \$30,000 in Fiscal Year 1982 funds for Morro Bay kangaroo rat habitat rehabilitation. On-the-ground work to set back plant succession in chaparral habitat (creating open interspaces in otherwise dense shrub cover) will be preceded by a study to determine the most appropriate manipulation method for improving kangaroo rat habitat.

Service representatives from the Sacramento office are helping to develop an interagency management plan for the Tijuana River Estuarine Sanctuary, which is habitat for three endangered species: the California least tern (*Sterna albifrons browni*), light-footed clapper rail, (*Rallus longirostris levipes*), and salt marsh bird's beak (*Cordylanthus maritimus* ssp. *maritimus*). The 505 acres of national wildlife refuge lands, along with the U.S. Navy and California State Parks and Recreation lands, will be managed jointly under the plan, in accordance with the Estuarine Sanctuary Program of the Coastal Zone Management Act. Primary emphasis is given to coordinating public use and natural resources objectives, relative to Federal and State listed species, as well as numerous other sensitive species.

Region 2—Approximately 375,000 razorback suckers (*Xyranchea texanus*) were stocked in the Salt River on March 16. A second release of 300,000 is planned for April 6 as part of the continuing conservation effort for the species being conducted in lieu of listing.

A male and female ocelot (*Felis pardalis*) were recently radio-collared as part of a research contract with San Angelo University in Texas. The pair is now being tracked in their south Texas range.

A number of springs around Bylas, Arizona, have been rehabilitated to eliminate the non-native mosquitofish (*Gambusia affinis*) which had recently invaded these spring habitats of the Endangered Gila topminnow (*Poeciliopsis occidentalis*). The remaining topminnows, snails, and aquatic vertebrates

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U.S. Fish and Wildlife Regions

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

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Conference

The First Bicentennial Conference on Research in California's National Parks will be presented by the Cooperative Park Studies Unit, University of California, Davis, September 9-10, 1982. The purpose of the conference, which will be held in Davis, is to provide a scientific forum for the presentation and discussion of research related to the biological and sociological resources of California's National Parks. It is designed for anyone who has conducted research in or is interested in National Park Service research and resource management. For more information call 916/752-7119.

New Publication

The *U.S. List of Endangered and Threatened Wildlife and Plants* (50 CFR 17.11 and 17.12), reprinted January 1, 1982, is now available. Please request copies from Office of Public Affairs—Publications, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

REGIONAL BRIEFS

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Yellowstone Ecosystem. Representatives of two National Parks, five National Forests, three States, Bureau of Land Management, and FWS met to review management of grizzly bears and their habitat. Also in February, Billings personnel attended a meeting on grizzly bear relocation guidelines. In attendance were representatives from the U.S. Forest Service, Bureau of Land Management, National Park Service, Bureau of Indian Affairs, and Montana Department of Fish, Wildlife and Parks. Attendees reviewed sites and proce-

dures for relocating problem grizzly bears in 1982.

A Montana Bald Eagle Working Group has been formed, and in January, the FWS, Montana Department of Fish, Wildlife and Parks, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Forest Service, and university scientists met to coordinate efforts on the bird in Montana. In February, the group met to establish procedures and coordination for a Statewide bald eagle nesting survey in Montana in 1982.

The Wyoming Game and Fish Department will be the lead agency in black footed ferret (*Mustela nigripes*) recovery in Wyoming. The department has established a Black-footed Ferret Advi-

sory Team (BFAT), consisting of representatives from the Wyoming Game and Fish Department, Bureau of Land Management, Forest Service, FWS, University of Wyoming, and private landowners. Any input pertinent to the Service should be directed to the Endangered Species Coordinator at the FWS Billings office.

Region 7—The Japanese Conservation Bureau has formally requested from the Service a loan of Aleutian Canada goose (*Branta canadensis leucopareia*) breeding pairs to help that country reestablish a wintering population of the Endangered bird. Aleutian Canada geese historically wintered in Japan, as well as from British Columbia to California in North America.

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	22	281
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	28	4	11	12	0	0	55
Snails	3	0	1	5	0	0	9
Clams	23	0	2	0	0	0	25
Crustaceans	2	0	0	0	0	0	2
Insects	7	0	0	4	2	0	13
Plants	51	2	0	7	1	2	63
TOTAL	193	43	445	45	7	24	757

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

Number of species currently proposed: 10 animals
9 plants

Number of Critical Habitats Listed: 50

Number of Recovery Teams appointed: 69

Number of Recovery Plans approved: 51

Number of Cooperative Agreements signed with States:
38 fish & wildlife
11 plants

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had been removed from the springs and their outflows prior to the application of the toxic chemicals used for fish control, and were replaced later after the chemicals dissipated.

The two small bald eagle chicks whose nest tree was imperiled by the rising Horseshoe Reservoir in Arizona (see March 1982 BULLETIN) were removed literally moments before the nest was inundated. The chicks were held at the Phoenix Zoo while attempts were made to reestablish the nest above flood levels. When these attempts failed, the chicks were placed in a nearby bald eagle nest whose adult pair was trying to incubate non-viable eggs. The pair readily accepted the chicks and began feeding them immediately.

A different bald eagle adult, thought to be a female, recently disappeared from its territory shortly after being seen in combat with a golden eagle (*Aquila chrysaetos*) over Tonto National Forest, Arizona. The remaining adult then became disinterested in feeding its 3-week old chick. After 6 days without the chick being fed, U.S. Forest Service (USFS) biologists took it and began feeding it. In cooperation with the FWS, the USFS took the chick to a distant nest where another chick had disappeared. There it was accepted and fed by the resident bald eagle pair.

Region 3—Endangered Species Staff members met recently with representatives of the Iowa Department of Conservation to discuss contract work on the bald eagle, Indiana bat (*Myotis sodalis*), Higgins' eye pearly mussel (*Lampsilis higginsii*), and Iowa Pleistocene snail (*Discus macclintockii*).

Work is progressing on a new miniature telemetry package to be used in research on the Kirtland's warbler (*Dendroica kirtlandii*). The transmitter, which will weigh 1.2 to 1.3 grams, is being developed by Clyde Jones and his staff at the Denver Wildlife Research Center. Prior to use on the Kirtland's warbler, which weighs an average of 14 grams, it will first be tested on a similar-sized, migratory species. The transmitter is expected to have applications for research on a wide variety of bird species.

Region 4—The Florida Game and Fresh Water Fish Commission has reported the radio collaring of six Florida panthers (*Felis concolor coryi*) in south Florida. Two males and two females have been collared in the Fakahatchee Strand area. One of these females was pregnant and had to have buckshot removed during the tagging operation. Two males have also been tagged in the Raccoon Point area of the Big Cypress National Preserve.

Funding has been approved for divers from the Tennessee Valley Authority and the Service to conduct a survey to determine if the main channel of the

Tennessee River contains a viable self-sustaining population of snail darters (*Percina tanasi*).

In order to determine potential hacking sites for peregrine falcons (*Falco peregrinus*), the Service and the North Carolina Wildlife Resources Commission are conducting a survey on the great-horned owl (*Bubo virginianus*), a potential predator on young peregrines. The peregrine hacking effort is scheduled to begin in 1984.

Five Mississippi sandhill cranes (*Grus canadensis pulla*) have been released on the Mississippi Sandhill Crane National Wildlife Refuge. These cranes were young-of-the-year obtained from the Patuxent Wildlife Research Center. Each crane was radio-collared to determine movements and habitat utilization.

Region 5—The Virginia Round-leaf Birch Recovery Plan has been approved (see the story in this month's BULLETIN), the Chesapeake Bay Bald Eagle Recovery Plan has been submitted to the Director for approval, and the Delmarva Fox Squirrel Recovery Plan, originally approved in 1979, has been revised, and submitted to the Washington office.

Adult peregrine falcons (*Falco peregrinus*) are returning to nesting towers in Virginia and New Jersey, and an increase in numbers of nesting pairs is anticipated for this season.

Plans are progressing for a repeat of last summer's intensive public information and education program on the Robbins cinquefoil (*Potentilla robbinsiana*). One of the few populations of this plant is found along the Appalachian Trail in the White Mountains of New Hampshire. The program is a cooperative effort of the Fish and Wildlife Service, the U.S. Forest Service, and the Appalachian Mountain Club.

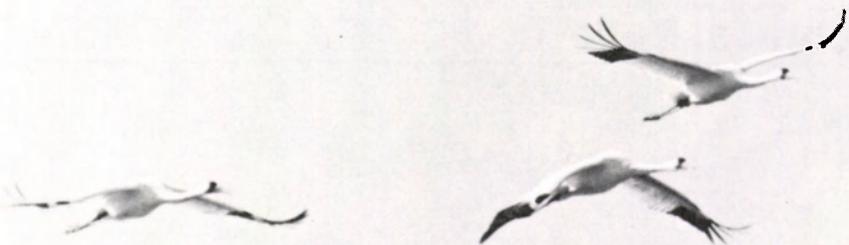
Region 6—The Wood Buffalo-Aransas whooping crane (*Grus americana*) flock is monitored each spring and fall during migration. According to the Service's Pierre, South Dakota, office, which accumulates the sightings, there were

58 confirmed and probable sightings in fall 1981. Recorded observations of migrant whoopers began on August 30 in Canada and September 29 in the U.S. Sightings were reported from Alberta (3) and Saskatchewan (16) in Canada, and Montana (1), North Dakota (6), South Dakota (3), Nebraska (6), Kansas (6), Missouri (1), Oklahoma (8), and Texas (8). Arrivals at the Aransas National Wildlife Refuge in Texas began on October 22.

The status of the interior least (little) tern (*Sterna albifrons athalassos*) is drawing attention as more information on the species is compiled. In 1981, Regions 2, 3, 4, and 6 assembled the available information, and James E. Ducey consolidated it into a summary report. The report may result in a concerted field effort toward determining an improved understanding of the status of the species.

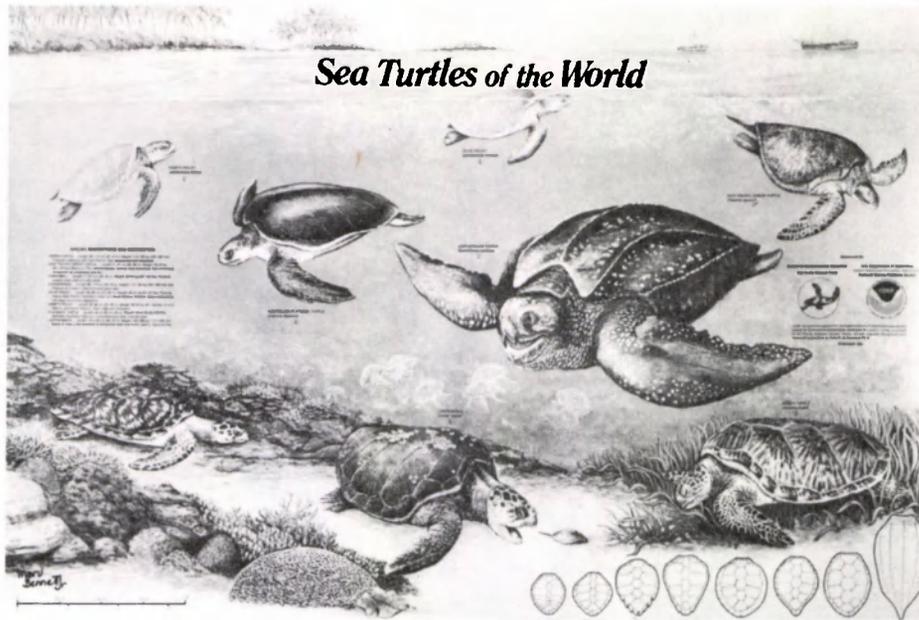
In February, a meeting was held in Manhattan, Kansas, to discuss current studies and management activities for the least tern. State, Federal, and private organizations were represented. Of ultimate concern was what can be done through coordinated activities to improve and standardize the information base for least tern populations and their habitat. The group recognized the need for more precise information about the tern, but also acknowledged the limited funding available. The recommendations encourage interested parties to (1) determine least tern distribution, (2) determine the adult-subadult population, (3) conduct a periodic, Statewide status survey once every 3 years (targeted to start in 1983), (4) identify habitat being used and threats to that habitat, (5) inform other State and Federal biologists of management techniques developed and other studies conducted, and (6) funnel information to a central record-keeping location (to be determined).

In February, the Billings office hosted a meeting on management of grizzly bears (*Ursus arctos horribilis*) in the
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Whooping cranes (*Grus americana*) in flight over Aransas National Wildlife Refuge.

Sea Turtle Identification Poster Available



Pictured above is the new sea turtle identification poster jointly developed by the National Marine Fisheries Service and The Sea Turtle Rescue Fund of the Center for Environmental Education. Seven of the eight species of sea turtle are protected under the Endangered Species Act of 1973.

A full-color sea turtle poster, designed to assist in the proper identification of eight sea turtle species, has been jointly developed by the National Marine Fisheries Service (NMFS) and The Sea Turtle Rescue Fund of the Center for Environmental Education (CEE). The poster is meant to be of specific use to volunteer workers upon whom many sea turtle protection efforts depend, and to be of educational use for the general public.

Printed on a water-resistant surface,

the 24 x 36 inch poster depicts each of the eight sea turtle species in their natural habitats. Artist Marvin Bennett, under the technical supervision of Dr. Peter C. H. Pritchard, has faithfully rendered each species to allow a sea turtle observer a means of identifying an encountered animal. It is vivid in its detail and in depicting characteristic behavior of each species.

The first copy of the poster was given by representatives of NMFS and CEE to Dr. Archie Carr, Jr. at a ceremony held at the Main Commerce Building in

Washington, D.C. on March 18, 1982. Dr. Carr was recognized for his important contribution to sea turtle conservation, both in the United States and abroad.

Single copies of the poster may be obtained free of charge from the NMFS Washington and regional offices or by contacting Charles A. Oravetz, National Marine Fisheries Service, Southeast Region, 9450 Koger Boulevard, St. Petersburg, Florida 33702 (813/893-3366 or 813/893-3720).

VIRGINIA ROUND-LEAF BIRCH

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Forest. Among its recommendations were fencing-off the two trees, construction of visitor information facilities near the large tree, notification of persons and agencies in the area whose activities could affect the population, and development of a research plan. Most of the USFS recommendations had been carried out by the time the plan was released in late 1976.

Management was further enhanced by creation of the *Betula uber* Protection, Management, and Research Coordinating Committee. This committee acts as an informal recovery team, and is comprised of representatives of the FWS, USFS, VPI & SU, National Arboretum, and Virginia Department of Agriculture and Consumer Services. No undocumented removals of individuals

have occurred since formation of the committee and access to materials on public land was controlled. Three trees and one other seedling have died of natural causes. A new coordinated search for other populations was conducted during the summer of 1977 but, as with the earlier efforts, none were found.

Propagation efforts for *B. uber* have been concentrated at the National Arboretum in Washington, D.C., and this facility has the responsibility for disseminating living and dead specimens. During 1975-1977, approximately 50 individuals were produced from rooted cuttings which originated from current shoots of three saplings growing at the Arboretum. Forty of the individuals propagated from cuttings remain at the Arboretum, while the remaining ten have been distributed to seven different botanical garden locations. Unfortunately, production of additional indi-

viduals from cuttings of older trees and germination from seeds has been largely unsuccessful.

Research

A research program for *B. uber* was initiated in 1978 when the coordinating committee convened a group of biologists with experience in other birch species to develop a research plan. The first two recommendations of this advisory panel were that any research efforts which might alter the natural population be postponed until a detailed population assessment is made, and that vegetative propagation at the Arboretum be continued in order to maintain the gene pool, provide individuals for establishing additional wild populations, and produce material for studies of reproductive biology and genetics. Three specific areas of research were given

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priority: population ecology, reproductive biology, and evolutionary relationships.

The *B. uber* population at Cressy Creek occurs within a much larger population of related dark-barked birch species (*B. lenta* and *B. alleghaniensis*.) Accordingly, the studies of population ecology are to involve the life cycles of all three species. Investigations of reproductive biology, to be conducted primarily on specimens vegetatively propagated, will include the cellular genetics of reproductive structures, pollen analysis, and studies of controlled crosses between individuals of *B. uber* and *B. lenta*.

Recovery Recommendations

Many of the specific steps outlined in the recovery plan are continuations of previous efforts. Management of the wild population and its habitat will be facilitated by fencing, posting of "no trespassing" signs, a closure order on national forest property, erosion control, and working with property owners. The trees will be monitored for general condition and incidence of disease/insect infestation. Work will continue on vegetative propagation (along with distribution of propagated specimens), and seed and pollen banks will be established.

A determination of essential habitat requirements, including microclimate, soils, and associated vegetation, is another important part of the recovery plan. As is true with other birches, *B. uber* might be characterized as a pioneer species which invades disturbed areas, and without periodic disturbance it may not maintain itself on a local scale. Natural regeneration of *B. uber* at the Cressy Creek site will be encouraged through selective removal of competing vegetation, preparation of seedbeds, and continued monitoring of individuals. The plan also calls for establishment of additional natural populations.

Public information programs will continue as another significant facet of the recovery plan. At the Mount Rogers National Recreation Area, the USFS has installed signs and an elevated walkway directing visitors to the largest individual of *B. uber* (which is fenced), to channel public access and for environmental education purposes.

Copies of the Virginia Round-leaf Birch Recovery Plan are available from the Regional Office, U.S. Fish and Wildlife Service, Suite 700, One Gateway Center, Newton Corner, Massachusetts 02158 (Attn: Dick Dyer).

Service Begins Two Status Reviews

The Service is reviewing the status of the Tar River spiny mussel (*Canthyrta* sp.) and the spotted bat (*Euderma maculatum*) to determine if these species should be added to the U.S. List of Endangered and Threatened Wildlife and Plants (F.R. 3/5/82 and F.R. 3/8/82, respectively.) The Service is seeking additional biological data on these species as well as information on environmental and economic impacts and effects on small entities that would result from listing them.

Tar River Spiny Mussel

The Tar River spiny mussel is believed to exist only within the Tar River, North Carolina. It has been identified by the North Carolina Wildlife Resources Commission as a species whose numbers appear to have been significantly reduced. The Service has also received two unsolicited research proposals on this species which include information on the mussel.

Even though malacologists have repeatedly surveyed the Tar River for this mussel, fewer than 20 specimens have been observed since it was first discovered in the Tar River at Tarboro, Edgecombe County, North Carolina, in 1968. Little is known of the mussel's life history. It appears most threatened by siltation resulting primarily from agricultural runoff. However, water projects such as reservoir, sewage treatment facilities, and channel clearance projects may have had a negative impact on the species in the past. Although it has yet



A spiny mussel. Reprinted from the Proceedings of a Symposium on Rare and Endangered Mollusks (Naiads) of the U.S., U.S. Fish and Wildlife Service.

to be described, it is considered to be a valid species.

Information regarding the status of this species should be submitted on or before June 3, 1982, to the Area Manager, U.S. Fish and Wildlife Service, 50 South French Broad Avenue, Plateau Building, Room A-5, Asheville, North Carolina 28801.

Spotted Bat

The distribution of the spotted bat, *Euderma maculatum*, is restricted to western North America. It ranges from the Mexican Plateau in the State of Queretaro to the southern border of British Columbia. Although this bat is widely distributed, its occurrence within its known range is very local and patchy.

Euderma maculatum was first collected in March 1890 but by 1959, only 16 specimens had been obtained. Because of increased numbers of biologists working on bats and because of improved techniques for capturing and studying bats, more specimens, new locations, and several small but viable populations have been found in the past 2 decades.

The known viable populations of *Euderma* in the United States occur on lands of the National Park Service in Big Bend National Park, Texas; the U.S. Forest Service in the Gila and Santa Fe National Forest, New Mexico; and on public lands administered by the Bureau of Land Management in the St. George, Utah, District. Most of the other known sites of occurrence also come within the boundaries of lands controlled by one or more of the above Federal agencies.

Even though an apparently large literature base on the species does exist, little substantial knowledge is available on population ecology of *Euderma*. A detailed description of preferred crevice location and internal micro-climate is needed. As with other plecotine bats, *Euderma* probably does not migrate great distances and appears to be particularly sensitive to human disturbance.

Arizona, Nevada, Utah, and Wyoming have designated the spotted bat as a species deserving special consideration. This classification by State wildlife agencies, however, provides only limited protection; disturbance and modification of habitat are not included among State prohibitions.

Comments and data submitted in connection with this review should be submitted on or before June 7, 1982, to the Director (Office of Endangered Species), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.