



# ENDANGERED SPECIES TECHNICAL BULLETIN

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



California condor Critical Habitat determined in ruiemaking. (See page 3.)

## Consultation With TVA On Saving Snail Darter

The Fish and Wildlife Service recently completed an intensive round of consultation with the Tennessee Valley Authority (TVA) concerning the fate of the Endangered snail darter. This consultation activity also involved the State of Tennessee Wildlife Resources Agency.

The need for consultation arose because construction of the TVA's \$100-million Tellico Dam on the Little Tennessee River poses a serious threat to the habitat of the snail darter.

The fish was not discovered in the river until six years after construction was begun on the dam. On April 1, 1976, with closure of the dam scheduled for January 1977, a 17-mile-long stretch of the river upstream from the dam site in Loudon County, Tenn., was listed as Critical Habitat for the fish.

A law suit was brought against the TVA by conservationists who claimed that the dam's reservoir would destroy the snail darter's habitat. A lower court allowed construction to proceed, as did the Sixth Circuit Court of Appeals, which held a hearing on October 14 on an appeal of the lower court decision. However, pending a final ruling on the case, the circuit did enjoin the TVA from closing the dam.

(continued on page 2)

## HABITAT ACQUISITION: \$7.1 MILLION LAND PURCHASES SET FOR ENDANGERED ANIMALS

Keith M. Schreiner, *Endangered Species Program Manager*

A hard fact about helping Endangered species to recover is that it is expensive—particularly the acquisition of habitat.

Land costs, especially in areas scheduled for development, are under heavy inflationary pressure these days. Unfortunately, it is often just such areas that are the natural and only habitats of some of our most critically endangered animals.

In laying out the Endangered Species Program's land purchases, we have had to plan on paying several thousand dollars per acre. In Hawaii, for example, we must pay up to \$10,000 an acre in order to preserve wetlands for Endangered waterbirds.

The initial purchase cost is only one concern in deciding what lands to acquire within our budget. We also have to consider the long-term costs of developing, operating, and maintaining the purchased land as a refuge. We have to take into account the possibility that these ongoing costs may cut heavily into other Program activities as time goes on.

Accordingly, where it is both legally permissible and agreeable to all concerned, we try to enter into arrangements whereby other Federal agencies and individual states can share or assume the management costs.

The ceiling placed on Endangered Species Program authorizations makes it essential for us to explore such alternative arrangements as much as possible. (Funds for land acquisition come from the Land and Water Conservation Fund, which is financed by receipts from Outer Continental Shelf mineral leasing and the tax on outboard motor fuel).

The Program currently is scheduled to acquire a total of 8,895 acres for \$7.1 million under its regular FY 1977 budget.

### Acquisition Plans for FY 77

All of our regularly scheduled projects for FY 77 would be additions to refuge lands acquired earlier. In Mississippi, for example, we plan to buy 2,770 acres  
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## First Endangered Species State Grants Total Over \$1 Million

Top-priority Endangered species projects in 14 states are tentatively scheduled to receive a total of \$1,070,000 in Federal assistance under the States' cooperative agreements with the Endangered Species Program.

An additional \$70,000 is tentatively earmarked for projects in two other states, South Dakota and Virginia, that are expected to sign agreements in the near future.

The largest allocation, \$450,000, is slated to go to California for acquisition of land to preserve the Morro Bay kangaroo rat and for purchase of the Palisades ecological reserve for the peregrine falcon.

Other planned allocations (and some sample projects) include the following:  
Washington—\$45,000 (develop

breeding pairs of peregrine falcons); Michigan—\$70,000 (research, census, and habitat acquisition for Kirtland's warbler); Arkansas—\$30,000; Florida—\$70,000 (brown pelican survey and pesticide monitoring); South Carolina—\$90,000; Delaware—\$10,000; New Jersey—\$20,000 (peregrine falcon reintroduction); New York—\$60,000; Maine—\$10,000; Maryland—\$60,000; Colorado—\$100,000 (peregrine falcon recovery, blackfooted ferret habitat inventory, and greenback cutthroat trout propagation); Missouri—\$45,000 (development of cave grating for Indiana bat); and Wisconsin—\$10,000.

A total of \$2 million was appropriated in FY 76 funds for the cooperative program. The remaining funds are scheduled to be allocated in December.

## U.S. FOREST SERVICE RESEARCH PROJECTS ASSIST 28 ENDANGERED SPECIES IN FY 77

The U.S. Department of Agriculture's Forest Service has budgeted \$750,000 in FY 77 to conduct nine research projects involving 28 Endangered and Threatened species.

The projects are being conducted at Forest Service Experiment Stations and universities around the country. They comprise one of the most active Federal programs cooperating with the Fish and Wildlife Service's Endangered Species Program.

Examples of the work underway:

- The North Central Forest Experiment Station's Wildlife and Recreation Research Work Unit in Minnesota has been assigned responsibility for a 5-year program to develop habitat management techniques to ensure recovery of the Endangered eastern timber wolf and Kirtland's warbler on Forest Service lands. A program of needed research has been planned in coordination with the two Fish and Wildlife Service Recovery Teams, and initial field and literature studies by the Unit's scientists are getting underway.

Present staff consists of a plant ecologist, two wildlife biologists, and two technicians. An avian ecologist will soon be added to the staff. (Contact: Lewis F. Ohman, North Central Forest Experiment Station, Falwell Avenue, St. Paul Campus, University of Minnesota, St. Paul, MN 55101.)

- Another major effort is taking place at the Southeastern Forest Experiment Station where the Forest Service has initiated a comprehensive research

program on the red-cockaded woodpecker. In cooperation with the Department of Forestry, Clemson University, Forest Service biologists are studying the woodpecker's habitat requirements in South Carolina coastal plain forests. Twenty-five woodpecker colonies, representing the range of habitats occupied by this species, have been selected for intensive investigation.

Continuing studies of foraging behavior, foraging habitat selection, colony stand characteristics, home range size, and reproductive success are being conducted on each woodpecker clan. The relationships between habitat use, habitat structure, and recruitment and attrition in woodpecker clans will be explored. The studies are being conducted in the Francis Marion National Forest which supports perhaps the largest known population of red-cockaded woodpeckers. (Contact: M.R. Lennartz, Southeastern Forest Experiment Station, c/o Dept. of Forestry, Clemson U., Clemson, SC 29631.)

### Reference Note

All Service notices and proposed and final rulemakings are published in the **Federal Register** in full detail. The parenthetical references—i.e., (F.R. 6/10/76)—given in the BULLETIN list the month, day, and year the rulemaking appeared in the **Federal Register**.

## Snail Darter Consultation

(continued from page 1)

The TVA formally requested this recent consultation under section 7 of the Endangered Species Act of 1973. This section directs all Federal agencies in consultation with and with the assistance of, the Secretary of the Interior, to ensure that actions authorized, funded, or carried out by such agencies do not either jeopardize the continued existence of Endangered or Threatened species or result in the destruction or adverse modification of their critical habitats.

### Consultation Alternatives

In the final step of the recent consultation, the Service transmitted to the TVA a series of alternative conservation measures that could be adopted if the TVA eventually wins court permission to close the dam.

In its letter, the Service told the TVA that, if the dam is closed as planned, "the continued existence of the snail darter will be jeopardized and its Critical Habitat will be destroyed." The Service then presented three alternatives in descending order of desirability to preserve the fish if the dam is closed:

1. Delay closure until there is assured establishment of a viable, self-sustaining population of the snail darters that have already been transplanted to the Hiwassee River. This could take 5 to 15 years or more.

2. Delay closure for a minimum of 3 to 5 years, the time needed for a preliminary determination to be made as to whether the fish has become established in the Hiwassee or another suitable habitat.

3. Initiate an expanded transplant program immediately to remove as many snail darters as possible from the portions of the Little Tennessee to be inundated by the dam. This is the "least desirable" alternative.

Regardless of whether or not the dam is eventually closed, the Service also recommended that the dam be operated to allow a continual flow of water downstream to maintain a suitable habitat for a population of snail darters below the dam.

However, if closure is banned permanently, the Service believes that, as it informed the TVA, a new round of consultation should be initiated to determine the best use of the TVA's investment. One alternative would be to operate the structure as a dry dam, which means that the gates would be closed only during flood threats.

Under the terms of the 1973 act, it is the responsibility of the Federal agency involved (in this case, the TVA) to decide whether or not to accept the Service's recommendations. In the meantime, the TVA does make the point that a permanent ban on closure of the dam would cause "great harm" to the public because of the loss of capital invested in the project.

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## Rulemaking Actions September 1976

### California Condor

A final Critical Habitat determination for the California condor (*Gymnogyps californianus*) published recently (F.R. 9/24/76) adheres to the same boundaries set forth in the original proposal (F.R. 12/16/75). The final rulemaking becomes effective on October 22, 1976.

Five conservation groups registered concern that the western boundary of the Sespe-Piru nesting area of Los Padres National Forest may have been drawn to exclude land involved in a phosphate mining lease application. However, this boundary was drawn to follow a section line without reference to the presence or absence of the phosphate lease, and the Service found no biological justification for extending the Critical Habitat zone into an area with virtually no record of past condor use.

Under section 7 of the Endangered Species Act of 1973, decisions about possible disruption of the Critical Habitat by mining activities will be the responsibility of the Bureau of Land Management, which issues mining permits.

The ruling recognizes nine separate parts of the condor's range in California as critical. The Sespe-Piru area of 250 square miles is the largest, and it provides most of the nesting sites for the 40-50 California condors remaining in existence. Six other parcels in the Los Padres National Forest totalling 135 square miles also are listed as critical for nesting and roosting. The Tejon Ranch, which is scheduled to be acquired by the Service as a condor refuge, and rangelands in Kern and Tulare counties totalling 540 square miles are listed as critical for feeding.

### Indiana Bat

Specifications for Critical Habitat for the Indiana bat (*Myotis sodalis*) in the final rulemaking (F.R. 9/24/76) are identical with those in the original proposal (F.R. 12/16/75). They become effective on October 22, 1976.

However, in response to comments received from the States of Missouri, Indiana, Kentucky, and Tennessee, the Service is considering addition of more caves at a later date. Under section 7, the U.S. Army Corps of Engineers will need to evaluate possible adverse effects of the Meramec Park Lake project in Missouri on several of the caves. The bat, numbering several hundred thousand, is losing the special caves it needs for winter hibernation. About 75 percent of the known populations hibernate in 13 caves and mines in Illinois, Indiana, Kentucky, Missouri, Tennessee, and West Virginia. These places are all listed as Critical Habitat.

### American Crocodile

Critical Habitat for the American crocodile (*Crocodylus acutus*) as determined in the final rulemaking (F.R. 9/24/76) includes portions of Everglades National Park and keys in Biscayne and Florida bays. The ruling is effective October 22, 1976. National Audubon Society recommendations to add additional areas remain under consideration. The final rulemaking requires appropriate Federal agencies to evaluate and possibly modify dredge and fill permits affecting nesting in the Key Largo area and motorboat traffic in Everglades National Park.

The Critical Habitat lies mostly in the national park and the northern keys in Dade and Monroe Counties. Of the estimated 200-300 crocodiles, only about ten are nesting females. The species depends on the quiet waters of Florida Bay and associated marshes for feeding and nesting.

### Florida Manatee

The final rulemaking (F.R. 9/24/76) for the Florida manatee (*Trichechus manatus*) maintains the original Critical Habitat boundaries set forth in the proposed rulemaking (F.R. 12/16/75). This becomes effective on October 22, 1976. However, the Service is considering possible future habitat additions in Georgia and Florida proposed by the Georgia Conservancy and the Florida State Museum. All of the waterways in the rulemaking are in Florida, where most of the 600-1,000 manatees are concentrated. The rulemaking will require the U.S. Army Corps of Engineers to evaluate the potential habitat effects of a number of proposed bridges and dredging operations in the area.

### Wounded Condor Making Comeback

Veterinarians at the Los Angeles Zoo are nursing back to health an adult California condor found wounded on the Tejon Ranch, which is scheduled for acquisition as a condor refuge.

When picked up on September 17 by California Fish and Game wardens, the bird had a broken wing and an infection, apparently caused by gunshot two weeks earlier. When found, it weighed only 12 pounds, half its normal weight.

Since then, the condor has regained the lost weight. However, there is still uncertainty as to whether it will recover sufficiently to be returned to the wild. The veterinarians say that, if the infection does not clear up in a few weeks, the wing may have to be amputated. Furthermore, even if the wing can be saved, there is a chance that the bird may not regain its full powers of flight.

Nevertheless, keeping the bird alive, even in captivity, will have prevented the loss of another California condor. The total population of this Endangered species now numbers less than fifty. Only one other is in captivity. Named Topatopa, it is kept at the Los Angeles Zoo.

### We Need Your Help

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

## BOX SCORE OF SPECIES LISTINGS

Category	Number of Endangered Species			Number of Threatened Species		
	U.S.	Foreign	Total	U.S.	Foreign	Total
Mammals .....	35	215	250	1	3	4
Birds .....	65	144	209	1		1
Reptiles .....	8	46	54			
Amphibians .....	4	9	13			
Fishes .....	30	10	40	4		4
Snails .....		1	1			
Clams .....	22	2	24			
Crustaceans .....						
Insects .....	6		6	2		2
Plants .....						
Total .....	170	427	597	8	3	11

Number of species currently proposed: 73 animals  
1850 plants (approx.)

Number of Critical Habitats proposed: 7  
Number of Critical Habitats listed: 5  
Number of Recovery Teams appointed: 57  
Number of Recovery Plans approved: 3  
Number of Cooperative Agreements signed with States: 15

## Habitat Acquisition

(continued from page 1)

at an estimated cost of \$2.5 million to add to the Mississippi sandhill crane refuge. In Hawaii, where the wetlands habitat of waterbirds is fast disappearing because of drainage and development, we plan to acquire 425 acres at a cost of approximately \$2 million.

In Texas, we anticipate purchasing 1,600 acres at a cost of \$350,000 to add habitat to the Attwater's prairie chicken refuge. The bird's habitat is subject to heavy grazing and rice farming which destroy nesting cover.

In Florida, the \$750,000 programmed for the dusky seaside sparrow habitat is for a 1,160-acre addition to St. Johns National Wildlife Refuge. We expect this addition to help preserve a habitat that is subject to frequent wild fires.

Also in Florida, we are planning on adding to the Great White Heron National Wildlife Refuge with the purchase of

2,940 acres for \$1.5 million. Fortunately, this addition will also benefit several other Endangered and Threatened species, including the southern bald eagle, Florida manatee, American crocodile, and brown pelican.

### Land Heritage Projects

In addition to the regular FY 77 land acquisition program, the President's proposed Bicentennial Land Heritage Program would provide for the acquisition of 65,562 acres of habitat at a total cost of \$16.3 million. This land heritage program will be taken up by the next session of Congress, in January 1977.

As indicated in the accompanying chart, under this proposed program, acreage would be added for the Mississippi sandhill crane, Hawaiian waterbirds, and the dusky seaside sparrow.

The largest single project involves the expenditure of \$8 million to acquire the 56,000-acre Tejon ranch, which is an important feeding and roosting area for the California condor. After acquisition, the Fish and Wildlife Service plans to lease the land and keep it as a working

cattle ranch. Dead cattle are a main source of carrion food for the condor, and so this purchase will ensure that the feeding ground will be maintained. If not acquired, the ranch would be developed by private interests.

Another land heritage project would permit purchase, for \$200,000, of certain caves in Kentucky and West Virginia that constitute the home of the Indiana bat. This acquisition would enable us to control the 410-acre area in order to prevent human disturbance and vandalism of bat colonies during winter hibernation.

In addition, we look to the land heritage program to provide for acquisition of approximately 2,450 acres of pine and hardwoods flats to be added to the Blackwater National Wildlife Refuge in Maryland. Amounting to \$1.3 million, this expenditure would help preserve the habitat of the Delmarva fox squirrel. An additional benefit would be that this same area may also contain nest trees of another Endangered species, the red-cockaded woodpecker, which currently is reappearing in Maryland.

## ENDANGERED SPECIES: PROPOSED LAND ACQUISITION PLANS FOR FY 77

Species	Location	Endangered Species Program Regular Program		Bicentennial Land Heritage Program	
		Estimated Cost <sup>1</sup> (millions)	Area (acres)	Estimated Cost <sup>1</sup> (millions)	Area (acres)
Mississippi Sandhill Crane	Mississippi	\$2.50	2,770	\$5.00	6,000
Hawaiian Waterbirds	Hawaii	2.00	425	0.75	202
Dusky Seaside Sparrow	Florida	0.75	1,160	1.00	500
Attwater's Prairie Chicken	Texas	0.35	1,600		
Great White Heron	Florida	1.50	2,940		
California Condor	California			8.00	56,000
Delmarva Fox Squirrel	Maryland			1.30	2,450
Indiana Bat	Kentucky			0.20	410
	West Virginia				
<b>Total</b>		<b>\$7.10</b>	<b>8,895</b>	<b>\$16.25</b>	<b>65,562</b>

<sup>1</sup>Includes both cost of land and incidental acquisition costs.

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U.S. DEPARTMENT OF THE INTERIOR