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ENDANGERED SPECIES TECHNICAL BULLETIN

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

BORAX LAKE CHUB PROTECTED UNDER EMERGENCY RULE

Acting to safeguard this species from the destruction of its aquatic habitat, the Service has listed the Borax Lake chub (*Gila* sp.) as Endangered and designated its Critical Habitat under an emergency rulemaking (F.R. 5/28/80).

This fish is found only in Borax Lake (a small, 10-acre natural water body fed by a thermal spring) and its outflow, and in Lower Borax Lake in Oregon's Alvord Basin. Over time, the chub has become isolated from the surrounding watershed as the lake's perimeter has risen from mineral precipitation. Because of its position above the valley floor, the fragile Borax Lake ecosystem is extremely vulnerable to destruction by human modification for irrigation. The lowering of water levels from alteration of the lake's perimeter could adversely impact the chub by decreasing the lake and adjacent marsh habitat and by increasing water temperatures.

Geothermal development is also a major threat to the survival of the Borax Lake chub. Drilling activity in the valley floor could tap into hot water aquifers servicing remaining habitat, thereby altering both the pressure and temperature of thermal springs that maintain the lake.

Some geothermal leases have already been issued in the area by Interior's Bureau of Land Management (BLM), and additional leases are now planned. Although BLM has indicated that exploratory drilling would not begin for several months, listing of the chub and delineation of its Critical Habitat under the Endangered Species Act will insure consideration of the species' welfare during Federal environmental planning.

Photo by Jack Williams

The Borax Lake chub will receive Endangered Species Act protection for 240 days—enough time to allow for consideration of the species' welfare during plans for geothermal development in its habitat.

Endangered status and Critical Habitat designation (inclusive of areas required by the species for food and spawning, as well as additional land as a buffer zone around its aquatic habitat) shall be effective under this emergency rule for 240 days, or until January 23, 1981.

CRITICAL HABITAT REPROPOSED FOR COACHELLA VALLEY LIZARD

The Service has again proposed Critical Habitat designation for the Coachella Valley fringe-toed lizard (*Uma inornata*), a reptile uniquely adapted to sandy habitat in California's Coachella Valley (F.R. 5/28/80).

The species had been proposed for Threatened classification with Critical Habitat on September 28, 1978. However, in line with new procedural requirements imposed under the Endangered Species Act Amendments of 1978, the Critical Habitat portion of the previous proposal was withdrawn on March 6, 1979. (The subject notice proposes a significantly smaller area than initially proposed for designation as Critical Habitat.)

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REGIONAL BRIEFS

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

Region 1. Researchers report that a second California condor (*Gymnogyps californianus*) was recently hatched in the wild. The actual hatching was not observed as was the case with a condor chick which hatched on May 14 (see May 1980 BULLETIN). This second discovered condor chick is believed to be a couple of weeks older than the other.

The Hawaii Board of the Department of Land and Natural Resources approved, in concept, a cooperative agreement for Fish and Wildlife Service acquisition of Kealia Pond on the Island of Maui. Kealia Pond is considered essential habitat for the Hawaiian coot (*Fulica americana alai*), Hawaiian stilt (*Himantopus himantopus knudseni*), and Hawaiian gallinule (*Gallinula chloropus sandwicensis).*

At the Patuxent Wildlife Research Center in Maryland, two whooping crane (*Grus americana*) eggs were hatched, but one chick was found dead in the nest. The cause of death is unknown. These eggs are part of the ongoing experiment to establish a wild flock of whoopers with a nesting site at Grays Lake National Wildlife Refuge in Idaho. Eight eggs have hatched at Grays Lake this season, and hatching success on four other eggs will be determined soon.

Region 2. At Rancho Nuevo, Mexico, the number of nesting female Kemp's Ridley sea turtles (*Lepidochelys kempii*) appears to be down from last year, but it is still too early to make final determinations.

Three new sea turtle projects are planned: a program to develop marking techniques for hatchlings in Florida, and two surveys in Costa Rica.

Peregrine falcon (*Falco peregrinus anatum*) radio tagging was accomplished with spring northward migrants. One falcon was tracked from the Texas coast to the Canadian border—the farthest tracking to date. The bird made the trip in eight days.

A pesticide analysis program for peregrines is underway throughout the region.

Region 3. High winds turned a normally routine management practice into a nightmare, as a prescribed burn on behalf of the Endangered Kirtland's warbler (*Dendroica kirtlandii*) was blown out of control near Mio, Michigan, on May 5. The fire, which was set by U.S. Forest Service personnel, was intended to burn a 200-acre area. However, about an hour and a half after the burn started, wind gusts of up to 25 mph caused the flames to spread and burn approximately 28,000 acres of forest land. One firefighter was killed, dozens of homes destroyed, and about 1,000 people were forced to evacuate the area.

As for the warbler, about 100 acres of presently used nesting habitat was burned as well as 200 acres of potential nesting habitat. The fire is not expected to have a detrimental effect on future habitat management, but it will be necessary to change the rotation of areas for prescribed burns. None of

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U.S. Fish and Wildlife Service Regions

Region 1: California, Hawaii, Idaho, Nevada, Oregon, Washington, and Pacific Trust Territories. **Region 2:** Arizona, New Mexico, Oklahoma, and Texas. **Region 3:** Illinois, Indiana, Michigan, Minnesota, 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, Iowa, Kansas, Missouri, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. **Alaska Area:** Alaska

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the birds were in the area as they had not yet returned from their wintering grounds in the Bahamas.

Region 4. Survey work to locate the remaining dusky seaside sparrows *(Ammospiza maritima nigrescens)* has been completed on all of the potential habitat, and some of the more promising areas have been surveyed a second time. The four duskies found to date have all been males. No evidence of reproductive behavior or of females has been observed.

A total of 13 male duskies were counted in 1979, three of which were taken into captivity for possible use in a captive breeding program. One of the captive birds was found dead on April 21, 1980.

Region 5. The Service met with landowners in West Virginia to discuss fencing and gating the entrances to caves containing Indiana bats *(Myotis sodalis)* and Virginia big-eared bats *(Plecotus townsendii virginianus).*

Region 6. The Service is optomistic about its efforts to propagate the greenback cutthroat trout (*Salmo clarki stomias*). In 1977, greenbacks were transported from Como Creek, Colorado, to the Fish Cultural Development Center in Bozeman, Montana. In 1978, limited success resulted in a few young greenbacks. In 1979, both sexes spawned simultaneously, and approximately 500 fry were hatched. It is hoped that 1,000 fry can be hatched in 1980.

Northern Rocky Mountain Wolf Plan OK'd

The Northern Rocky Mountain Wolf (*Canis lupus irremotus*), a subspecies of the gray wolf, is slated for efforts to improve its status as outlined in a Service-approved recovery plan. (Although the entire species, *Canis lupus,* is federally protected throughout the 48 contiguous States, this recovery plan only deals with the subspecies *irremotus.* For a discussion of recovery efforts for other populations of gray wolf, see the August 1978 BULLETIN.)

Historically this subspecies occurred in Washington, Oregon, Idaho, Montana, Wyoming, South Dakota, and portions of Alberta and British Columbia in Canada. Its range has been reduced to scattered sightings in Montana, Wyoming, and Idaho. The decline of the Northern Rocky Mountain wolf has been attributed to land development, loss of habitat, poisoning, trapping, hunting, and the wolf's inability to adapt to most of man's development activities.

The wolf developed a reputation for preying on domestic livestock in the late 19th Century when hunters decimated herds of buffalo and other ungulates which were prey for wolves. Wolves had to turn to alternate prey and thus came into direct conflict with man. Buffalo hunters turned to hunting wolves to protect their livestock.

The objective of the recovery plan is to re-establish and maintain at least two populations of Northern Rocky Mountain wolf within its former range. To achieve this objective, the plan lists three major sub-objectives which must also be reached: (1) The current status and distribution of the subspecies must be determined, (2) perpetuation of the wolf in its present range must be insured (through protection of wolves and their habitat), and (3) populations must be re-established within the subspecies' historic range in areas where viable populations do not now exist.

The team suggests that a clarification of the taxonomic status of *C.l. irremotus* would simplify management planning. Examination of wolf skulls found in and around the subspecies' former range, body measurements on future mortalities in that area, and comparison of skull measurements and other data collected with other subspecies or geographic races of wolves will help update the classification of wolves. The historical distribution and relative abundance of the Northern Rocky Mountain wolf needs to be determined to provide a reference point against which the present status can be contrasted. According to the recovery team, "The present existence of wolves in the known historical distribution of the Northern Rocky Mountain wolf is documented, but tenuous."

Management of existing wolf populations will involve tasks such as minimizing direct, human-caused mortality, a concerted law enforcement effort, minimizing wolf-human conflicts, regulating predator control programs, and an intensive 3 to 4 year survey in all areas of occupied and suspected Northern Rocky Mountain wolf habitat. This would be used to determine environmental requirements of the subspecies and measures to protect or enhance those requirements. The team also recommends radio tagging wolves to learn more about territory sizes, seasonal patterns of use, and relationships to prey ranges and areas of human use.

Areas for transplanting populations will be selected based on existing and planned land use, vegetation, availability of prey, and impact on human activity. Public atttiudes will play a key role in the final selection of transplant sites. Therefore, a public information

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campaign to gather support in affected areas is an essential element of this recovery plan.

STATE ENDANGERED SPECIES AID RE-AUTHORIZED

On May 23, President Carter signed a bill authorizing funding to continue the Federal Endangered Species Grant-in-Aid Program for another two years.

P.L. 96-246 provides for the appropriation of up to $12 million for Fiscal Years 1981 and 1982 under Section 6 of the Endangered Species Act of 1973, allowing States now participating in the 2-to-1 matching fund program to carry out ongoing conservation activities for their Endangered and Threatened species. (As of May 1, 1980, 35 States had entered into cooperative agreements with the Service for the management and protection of endangered fish and wildlife, while another 4 are now involved in cooperative agreements to assist listed plants—allowed under 1978 amendments to the Act.) The increased authorization should also allow a number of additional States to receive Federal matching fund assistance under recently relaxed eligibility requirements designed to bring otherwise "disqualified" States into the grant-in-aid program (see the January 1978 and June 1979 BULLETINS).

President Carter had previously signed legislation authorizing an additional $2 million to keep participating State programs on their feet through FY 1980, when only $3 million in appropriations (out of an estimated $5 million needed) were originally requested. (See our feature on the grant-in-aid program in the December 1979 BULLETIN).

This latest amendment restates the authorization through FY 1980 (not to exceed $12 million for the period beginning October 1, 1977, through September 30, 1980—thereby accommodating that amount already authorized and appropriated together with the $2 million add-on) and authorizes an additional $12 million to carry Section 6 funding through September 30, 1982.

ALERT: CITES Notices

A number of notices are being published in the *Federal Register* with regard to U.S. actions under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the upcoming meeting of CITES Parties in New Delhi. While we do not have the space to devote to lengthy summaries of all recently published notices, we call your attention to the following which may be of interest:

- **Agenda, Third Conference of the Parties.** The Service's Wildlife Permit Office (WPO) has published a provisional agenda, with explanation of a number of items and draft resolutions —for the Third meeting of CITES Parties in New Delhi, India, February 2-13, 1981. Kindly consult the May 9, 1980, *Federal Register* for details.
- **Proposed revised implementation rules.** WPO has published a proposal to "regularize" the processes through which the public and concerned agencies may participate in the development of negotiating positions at meetings of the parties (F.R. 5/20/80). (A tentative schedule of meetings is available from the Service's Wildlife Permit Office—Attention: Mrs. Joan Anthony.)
- **Proposed Findings of nondetriment in response to U.S. District Court injunction on (1979-80) export of Bobcats** *(Lynx rufus).* Due to the necessarily short comment period provided on the subject notice (F.R. 5/21/80), we shall reserve space for a full report on the Service's notice of "final" findings, likely to be published by July 1, in our July issue. (Final approval of such exports (for the 1979-80 taking season) will depend on a favorable ruling by the courts.)

Upcoming Notices

Interested parties should look for the following notices—upon which the Service seeks active public involvement—in the *Federal Register* before July 1:

- Preliminary notice of species under consideration for U.S. proposals to amend the Appendices lists at the Third Conference of the Parties.
- Proposed Scientific Authority procedural regulations under CITES *and* Advance notice of proposed findings for export (1980-81 taking season) of bobcat, lynx (*Lynx canadensis*), American ginseng (*Panax quinquefolius*), Alaskan brown bear (*Ursos arctos*), Alaskan gray wolf (*Canis lupus*), and American alligator (*Alligator mississippiensis.*) (Public comment invited on procedural regs, and to be later invited on subsequent notice of proposed export findings, to be published shortly after the advance notice.)

MOU

Finally, a Memorandum of Understanding has been signed between the recently established International Convention Advisory Commission (ICAC) and the Secretary of the Interior (acting as U.S. Scientific Authority) setting forth certain procedural policies under CITES.

The forthcoming notices (inclusive of preliminary U.S. proposals) will be featured in the July 1980 BULLETIN.

U.S. Proposes Primates, Cacti for Appendix I

The Service has finalized a U.S. proposal to place three primates and seven cacti on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), to further promote the protection of these species from exploitation through international trade (F.R. 5/22/80).

All ten species—the Diana monkey (*Cercopithecus diana*), yellow-tailed woolly monkey *(Lagothrix flavicauda*), mandrill *(Papio (=Mandrillus) spinx),* and seven cacti (*Ariocarpus agavoides, A. scapharostrus, Aktekium ritteri, Echinocereus lindsayi, Obregonia denegrii, Pelecyphora aselliformis,* and *P. strobiliformis*) were the subjects of a January 4, 1980, notice announcing their consideration for transfer from the less restrictive Appendix II to Appendix I of CITES. (Kindly refer to the February 1980 BULLETIN for details on the status of and threats to these species.)

The subject proposal has been submitted to the Convention Secretariat for consideration by the Party nations through postal procedures provided under CITES.

HABITAT ACQUISITION: Costly but Necessary to the Recovery of Many Endangered Species

By far the greatest threat to the continued existence of wildlife and plants is the destruction of their native habitats. Since the colonists arrived on our shores more than 350 years ago, more than 500 species and subspecies of animals and plants have become extinct in the U.S.—largely the result of industrial, agricultural, residential, and recreational development.

As our population continues to grow, the accelerating competition for remaining undeveloped areas will make these lands even more valuable to humans as well as wildlife. Estimates from the U.S. Environmental Protection Agency indicate that up to 2 million acres will be developed each year in the U.S. between now and the year 2000.

Habitat protection has long been considered the key to the conservation of endangered animals and plants. Much habitat has been acquired and managed in recent years by private conservation organizations, State agencies, and concerned individuals. In still other cases, voluntary cooperative efforts have effectively protected endangered species habitat without the need for outright fee title acquisition.

When no other means is available, and habitat preservation is essential to the survival of an animal or plant, Service recovery plans often call for the Federal acquisition of lands and waters necessary to the conservation of Endangered or Threatened species.

Drafters of the Endangered Species Act of 1973 recognized the critical interrelationship between plants and animals and their environment, and so designed this legislation to provide "a means whereby the ecosystems upon which endangered species depend may be conserved, protected, or restored." As amended in 1978, the 1973 Act now authorizes the use of Land and Water Conservation Funds (established under the Land and Water Conservation Fund Act of 1965 and financed by receipts from Outer Continental Shelf mineral leasing, the tax on outboard motor fuel, and surplus property sales) for habitat acquisition for listed animals as well as plants. Once acquired, all of this habitat is protected and maintained as part of the National Wildlife Refuge System.

Fish and Wildlife Service Photo

This habitat in California's Tehachapi Mountains is typical of that recently approved for acquisition to protect areas essential to the California Condor.

As of March 1980, 248 National Wildlife Refuges were providing haven for 58 Endangered and Threatened species. While not all of these areas were established specifically for endangered wildlife, nearly 70,220 acres had been acquired for Endangered and Threatened species utilizing $39,866,608 in Land and Water Conservation Funds (LWCF's) through Fiscal Year 1979. (The first acquisition to benefit two listed plant species and an Endangered insect was recently accomplished utilizing nearly $2 million In LWCFs to acquire 55 acres of California's vulnerable Antioch Dunes—see the April 1980 BULLETIN.)

The overwhelming majority of wildlife and plant habitat is not controlled by Federal or State agencies, making protection of all essential areas by fee purchase an impossibility. Many other avenues for protection — such as through easements, leases, or management agreements—are investigated before areas are acquired outright. Unfortunately, often the more valuable

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natural areas are those imminently slated for development—and therefore the most expensive to acquire due to these competing interests. With the limited funds available, the Service must focus its acquisition planning on only the most crucial needs—and then only after all other habitat preservation alternatives have been explored and exhausted.

Acquisition Criteria

Once a species is listed, Federal acquisition is considered only after a Recovery Plan pinpointing the need to purchase and protect certain areas has been approved by the Director. (In situations where the degree of threat is such that there is little question of the need for land acquisition, an abbreviated or draft Recovery Plan focusing on acquisition is acceptable.)

The final decision as to the appropriateness of land or water acquisition will depend largely on (1) the needs of the species, (2) the area's vulnerability to destruction, and (3) the availability of development, operation, and maintenance funds—once the area becomes a part of the refuge system. (The initial purchase expense is only one concern in deciding what lands the Service can afford. The long-term costs of maintaining land and water areas as a refuge can cut heavily into other Program costs as time goes on.)

The Endangered Species Recovery Priority System is applied in determining the general order in which species will be awarded recovery funds, including those proposed for acquisition. The priorities are (1) species experiencing a high degree of threat over species facing lesser threats; (2) species with high recovery potential over a lower recovery potential; and (3) species over subspecies. Acquisitions benefitting two or more high priority species take precedence over those benefitting only one species. Essential or Critical Habitat areas that are in jeopardy for any reason (for high priority species) will take precedence over acquisitions of areas that are in no danger of being lost.

The Process

The land acquisition planning and implementation process is a complicated one, involving a series of evaluations and approvals which, in total, can take longer than 6 years.

All in all, the entire event—from initial planning stages to actual acquisition—can involve hundreds of discrete steps, with many carried out at a regional level. We will attempt to

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The Land Acquisition Process: Endangered Species

PLANNING

(October 1977) Listing (Critical Habitat designation)

Draft Recovery Plan

Recovery Plan Approval

Decision Document:
Ascertainment Reports
EA or EIS
Section 7 consultation

(January 1980)

(October 1979) Regional Director's Approval

Program Mana
recommendat

agency review

Secretary's approval

Interior budget request for *FY 82*

HCRS review—consolidated list of all agency LWCF needs

(Fall 1980)

OMB*

Interior LPG review (consolidated Interior list)

Congressional approval

(Summer 1981)

Director's approval — Service's priority-ranked request for LWCFs

LWCF appropriations authorization

BUDGETING

ACQUISITION

LAC review

HCRS

Program Manager's review

FWS budget

Regional Director's request for LWCFs

[Regional Office] appraisals

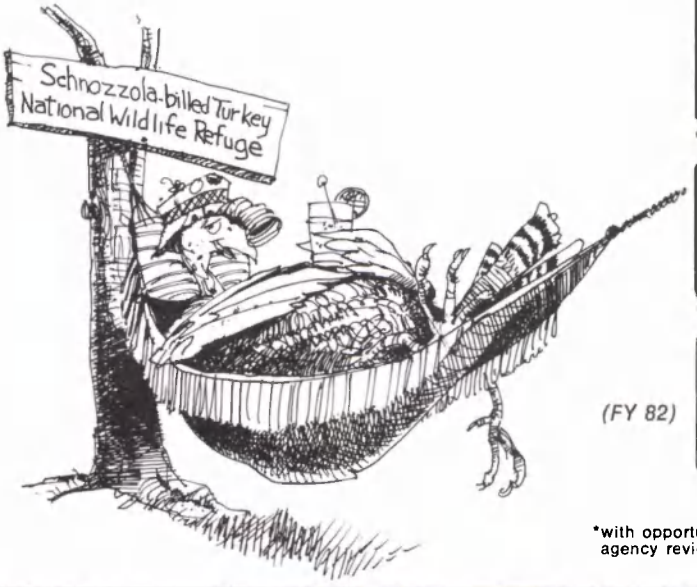
Director's Approval (include in Program Advice)

Negotiations with owners

LAC comments

(FY 82)

Habitat Acquisition



*with opportunity for agency review of passbacks

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summarize this lengthy process, as it may be applied to a critically Endangered (fictitious) species, the Schnozzola-billed turkey—see the accompanying flowchart.

Once abundant and widely distributed, the Schnozzola-billed turkey (*Turkus nasallogus*) is now confined to the southern timber swamps of the State of Minnetucky, where lumbering has reduced its habitat to about 500 acres. Former population numbers were substantial, but no more than 100 individuals survive today. This all-but-flightless bird is particularly vulnerable to human intrusion, hopping along the ground and attempting to jump to low-lying branches when disturbed. The turkey's available breeding habitat has been shrinking steadily, and is imminently threatened by the plans of an oil mogul to buy and convert this unique area to a ski resort. [For our purposes, recovery of this Endangered species is a top Service priority.]

- **Planning**

A recovery team was appointed by the Service to develop a recovery plan especially for the Schnozzola-billed turkey shortly after the species was listed for protection under the Endangered Species Act in October 1977 (at which time its Critical Habitat was also designated). More than a year later, the Schnozzola-Billed Turkey Recovery Plan—calling for the acquisition and protection of remaining Schnozzola habitat—was finalized and approved by the Service Director.

At this point, a number of "decision documents" sufficient in scope and depth to guide acquisition planning are needed for the sake of project review and budgeting. First, regional staffers prepare a decision document addressing biological values, engineering feasibility, realty cost data and other related information necessary to justify the acquisition plan to protect the turkey. All reasonable alternatives to fee title acquisition would also be discussed in this document. If the acquisition will displace persons from their dwellings, or businesses, a preliminary relocation plan will also be developed.

An integral part of the decision document is an Environmental Assessment (and, if necessary, an Environmental Impact Statement) in compliance with the National Environmental Policy Act of 1969 (NEPA). Also, as required under the Endangered Species Act of 1973, an intra-Service "Section 7 consultation" must be undertaken to insure that the acquisition action is not likely to jeopardize the existence of an Endangered or Threatened species (or its Critical Habitat) in the affected area.

[In accordance with NEPA, the Service notifies the affected State clearinghouses, Congressional delegations, and Federal agencies early in the habitat protection planning stages. There is opportunity for public comment throughout the planning process, with public meetings and/or hearings held on pending acquisition proposals whenever public interest warrants.]

In the case of the Schnozzola-bill, all decision documents are favorably received by the Regional Director in October 1979, who recognizes the critical nature of this acquisition request and forwards the decision document through the Washington Realty Office to the Endangered Species Program Manager for his consideration. Once in hand, the Schnozzola package is again promptly reviewed and an approval memorandum with the decision document is then passed along to the Service's specially-appointed Land Acquisition Committee (LAC) for its review. Once the LAC is assured that all the necessary preparations are in line with Service policy and priorities, it refers the package to the Director, together with any appropriate recommendations.

When the Director approves the acquisition proposal, the project is committed to the Service's "program advice"—necessary to authorize the allocation of funds through the region, should they be made available. At this point, the approved Schnozzola package is referred back to the Regional Director, who must formally request the use of (in this case) Land and Water Conservation Fund monies for the acquisition.

- **Budgeting**

At this time (around January 1980), we have completed the preliminary steps necessary to effect acquisition. But, unless drastic measures are warranted—in which case we would go directly to Congress with an urgent request that it authorize the emergency reprogramming of acquisition monies—we must go through at least as many steps again before the Schnozzola-billed turkey is assured of habitat protection.

As a next step, the Regional Director will prepare and submit a request for the authorization of LWCF's for Fiscal Year 1982. Once approved by the Endangered Species Program Manager, and then by the LAC, the request is then approved by the Director as part of the composite, priority-ranked Service request for Land and Water Conservation Fund monies.

The entire list is submitted to the Heritage Conservation and Recreation Service (HCRS), an Interior agency designed to coordinate (among other things) the financing of all Federal acquisition needs (using LWCF's) primarily for recreational purposes. The Schnozzola-bill request—along with all other acquisition needs—is then scrutinized by the Interior Department's Land Planning Group (LPG), and consolidated with all other Interior and U.S. Forest Service requests for LWCF's. HCRS may then re-rank the agency lists using its own priority system, and will return its consolidated list to the respective agencies for their further review. When agreement on a final ranking has been reached, the list is then submitted (around October 1980) to the Office of Management and Budget (OMB) as part of Interior's budget request for FY 1982, and from there is referred to Congress.

- **Acquisition**

Optimistically speaking, we shall assume that both OMB and Congress agree to the need for protection of Schnozzola-billed turkey habitat through acquisition. The President then signs the bill authorizing the appropriation of LWFC monies for this purpose (sometime in the summer of 1981), and the acquisition process then begins in earnest.

Once approved, HCRS sends the list of authorized projects to Interior agencies, and the amount appropriated is then earmarked in the Fish and Wildlife Service budget. Final appraisals are next conducted by the regional realty staff, and negotiations with landowners may then be initiated.

In FY 1982, purchase of tracts from owners of the approved area can begin, with acquisition of contiguous refuge units slated for completion generally within 3 years. When specific tracts present problems, or all reasonable attempts to negotiate purchase with landowners fail, the Service may then initiate condemnation proceedings. (This last-resort measure is undertaken only after all other efforts to protect the area have proven futile.)

Now that his habitat is secured, the Schnozzola-bill can at long last look forward to living out his years on the Service's Schnozzola-Billed Turkey National Wildlife Refuge.

Acquisition nears Completion for Mississippi Sandhills

As one can see, the process of preserving essential habitat—even for

the highest priority species—can be painstakingly long. As a case in point, our Service is now in the final phase of acquiring some 1,600 acres toward completion of the Mississippi Sandhill Crane National Wildlife Refuge for which funds were first allocated in 1976. Situated in Jackson County, protection of this entire area—designated as Critical Habitat for the crane under an emergency ruling in June 1975 and later finalized (with a somewhat smaller area delineated) on August 8, 1977—is absolutely vital to the survival of this subspecies.

Numbering only 40 in the wild, the Mississippi sandhill crane (*Grus canadensis pulla*) was the subject of the first case involving an Endangered species to reach the U.S. Supreme Court. Late in 1976, the high court ruled in favor of halting construction of an interchange on Interstate Highway 10, destined to destroy the primary range of the remaining cranes. (At that time, Mississippi's Governor Clifford Finch recommended Service acquisition of the nearly 2,000 acres in the area of the proposed interchange to insure protection of the land from developer's interests.)

Much of this essential habitat was bought from a prospective developer, and is today being managed to restore and maintain the crane's nesting, feeding, and roosting habitat.

Crystal River, Key Largo among Recent Approvals

In recent months, the Director has given the "go-ahead" for major Service acquisitions in Florida, and in several other areas, destined to protect critically Endangered species.

Nine small islands in King's Bay, the headwaters of Crystal River on Florida's west coast, were the subject of an acquisition proposal approved in January 1980 to protect the West Indian (Florida) manatee (*Trichechus manatus*). Designated as Critical Habitat for the manatee on August 11, 1977, Crystal River is the major wintering area for nearly 100 of the marine mammals—or about 10 percent of the surviving population—where they are attracted to warm-water springs that shelter the animals from lethal winter temperatures.

Boat traffic and disturbance by skin and scuba divers are serious threats to the manatee in this area, which has also been designated for special protection during winter months under Federal and State regulations (see the January 1980 BULLETIN). Acquisition of the approximately 50-acre area is considered the only recourse to preclude continued development of the King's Bay islands, which will increase boat traffic and other water activities that could prove disastrous to the wintering manatee population.

Although the estimated $400,000 needed to purchase the islands has not been made available through the budget process, The Nature Conservancy is now negotiating purchase of the islands in an attempt to protect the area before turning it over to our Service for establishment of the Crystal River National Wildlife Refuge when funds can be allocated. (See accompanying article on the Conservancy's habitat protection efforts.)

Key Largo—an island of mangroves, open water, and highly threatened uplands off the southeastern tip of Florida—is home to one of the largest populations of American crocodiles (*Crocodylus acutus*) in existence in the U.S. today. Designated as Critical Habitat on August 11, 1977, the southwestern side of North Key Largo contains prime nesting and feeding areas for the Endangered reptile. At least 25 adult crocodiles are thought to be present within this area, with seven active nests identified in 1978. (Commercial and residential development as well as municipal uses such as dumps and landfills are serious threats to remaining crocodile habitat.)

The acquisition of about 7,100 acres of mangrove swamps and adjacent areas sufficient to allow for the reasonable expansion of the crocodile—and to protect several other listed species occurring in the area—was approved by the Director in April 1980 at a projected (1981) cost of $9 million. Members of the Service-appointed recovery team for the crocodile believe Federal ownership of this habitat (allowing control of public access to and through the mangroves) is the only hope for protecting this vulnerable species, which is known to have little tolerance of human activity.

Acting to avert certain jeopardy to the species, The Nature Conservancy recently purchased (for eventual resale to the Service) 18 acres of upland buffer property adjacent to important nesting habitat that was imminently threatened.

Once established, the Crocodile Lake National Wildlife Refuge will provide protection for up to one-quarter of the entire remaining population of American crocodiles—now estimated at between 100-400 individuals.

While most habitats for Endangered and Threatened species are acquired (utilizing Land and Water Conservation Funds) under authority of the Endangered Species Act of 1973, several other Federal laws authorize the use of federally-appropriated monies for habitat protection purposes. (They include the Fish and Wildlife Act of 1965, the Migratory Bird Treaty Act of 1918,

Continued on page 10

U.S. Fish and Wildlife Service photo

Kings Bay of Crystal River is shown with numbered islands approved for acquisition. Water area behind Islands 2, 3, 4, 5, and 6 is the major manatee concentration area.

Continued from page 9

and the Refuge Recreation Act of 1962.)

Although not specifically authorized under the Endangered Species Act, the acquisition of nearly 4,000 acres of forest in Klamath County, Oregon (approved by the Director in April 1980) will provide protection to the bald eagle *(Haliaeetus leucocephalus),* listed as Threatened in this State. Together with 240 acres of timberland already acquired (through condemnation) to forestall logging of the area's ponderosa pines (see the July 1978 BULLETIN), eventual completion of the Bear Valley National Wildlife Refuge will one day secure this largest known roosting habitat for the species in the lower 48 States.

Other proposals recently approved for future Service acquisition include:

- **California condor** *(Gymnogyps californianus)*—1,700 acres in Tulare County, California, known to provide roosting habitat (and within the designated Critical Habitat) for this critically Endangered bird were approved in December 1979 for acquisition to protect the area from recreational development.
- **Watercress darter** *(Etheostoma nuchale)*—Two Alabama springs essential to the survival of this Endangered fish—with a declining population estimated at less than 500 individuals—have been earmarked for acquisition upon the Director's December 1979 approval to protect them from continued habitat degradation. (The Atlanta Regional Office reports that options have been secured on 7 acres of land containing one spring in Bessemer, Alabama.) A third spring may receive protection through a cooperative management agreement.
- **Brown pelican** *(Pelecanus occidentalis)*—Six of the North Rock-Shell Castle Islands and about 30 acres of Beacon Island in North Carolina's Pamlico Sound were approved in April 1980 for acquisition to protect the Endangered pelican's northernmost nesting habitat. Owners of the island group (exclusive of Beacon Island) apparently wish to donate their land to The Nature Conservancy —eventually to be a part of the Service's Cedar Island National Wildlife Refuge—to insure protection of these natural areas.

We will attempt to highlight future acquisition approvals as we learn of them in forthcoming issues of the *Bulletin.*

THE NATURE CONSERVANCY

By Anne M. Byers

The primary and most pervasive cause of disappearing plants and animals is habitat disruption and destruction. The Nature Conservancy, a publicly supported national, nonprofit conservation organization, recognizes that only by protecting remaining habitats can we hope to save rare and dwindling species from total eradication. The organization is devoted to preserving ecologically and environmentally significant natural lands, giving first priority to those areas that safeguard endangered, threatened, and rare plant and animal species. Its activities are made possible through contributions, foundation grants, membership dues, and recovery of expenses.

Since preserving its first area in 1953, the Conservancy has saved over 1.6 million acres of prairies, wetlands, islands, forests, and deserts in all 50 States, Canada, Latin America, and the Caribbean. The organization works in three ways. First, it *identifies* the lands that contain the best examples of all the components of the natural world, finding out what is rare and where it exists. Identification is accomplished through natural heritage programs, which are usually undertaken in cooperation with State governments. The inventory of a heritage program provides a continuing process for ascertaining the outstanding and vital natural areas in a State or region. By using the information collected and classified by a heritage inventory, land protection priorities can be set and unique environmental elements—such as rare ecosystems and species' habitats—can be protected *before* they are further imperiled. Since 1974, the Conservancy has established 23 natural heritage programs—22 with States, and another with the Tennessee Valley Authority. Of these numbers, half the programs have been fully transferred, as intended, to State governments. Results of State natural heritage programs are exemplified by the programs in South Carolina and Ohio, where the heritage inventories have rediscovered scored of plant species previously thought to have been extirpated.

The Conservancy then *protects* natural areas, usually through direct acquisition, either by purchasing land or by accepting donations of land from both individuals and corporations. Protection is also accomplished by assisting State and government agencies and other conservation groups to preserve natural areas. Finally, by using volunteer land stewards and professional staff, the Conservancy *manages* over 670 of its own sanctuaries. To date, The Nature Conservancy has established or helped to establish over 140 preserves harboring federally Endangered or Threatened species. Descriptions of several of these areas and their inhabitants follow.

Manatee: Although currently protected by the Federal Marine Mammal Protection Act of 1972, the 1973 Endangered Species Act, and more recently by the Florida Manatee Sanctuary Act of 1978, the gentle West Indian (Florida) manatee *(Trichechus manatus)* remains on the verge of extinction in Florida, where its numbers have dwindled to somewhere between 600 and 1,000 scattered individuals. It is particularly vulnerable to human activities—manatee deaths and injuries are most often caused by the propellers of speeding power boats. While the Service has finalized regulations for establishing special protection areas for the Endangered marine mammal, The Nature Conservancy has acquired or assisted other agencies in acquiring land for some nine areas known to harbor manatees. These refuges include Rookery Bay, Manatee Springs State Park, Jack Island, Osborn Sanctuary, Blowing Rocks, and Shired Island, lying at the mouth of the Suwannee River. Another tract of 490 acres on Jupi-

ter Island, which was donated to the Conservancy by the Hobe Sound Company in 1976, was transferred to the Fish and Wildlife Service for inclusion in the Hobe Sound National Wildlife Refuge.

Plymouth red-bellied turtle: It is believed that less than 200 of the large Plymouth red-bellied turtles *(Chrysemys rubriventris bangsi)* remain, their extreme rarity attributed to draining or polluting of their bogs and ponds and to vandalism. The known range of the turtle, which requires large bodies of fresh water for nesting and wintering, consists of only 11 ponds in Plymouth County, Massachusetts. All 11 have been declared Critical Habitat. In 1978 the Conservancy succeeded in saving a 183-acre area that includes two of the ponds and also provides a protective buffer. In an earlier research effort at the site, approximately 10 red-bellied turtles were caught, marked, and released.

Dwarf trillium: Recommended for listing as an endangered or threatened species, the dainty dwarf trillium (*Trillium pussilum*) was discovered by a Vanderbilt University botany student in Taylor Hollow, the only known location in Tennessee for the rare plant. The hollow is also the only home of a sedge, *Carex purpurifera*, and a synandra, *Synandra hispidula*—both "candidates" for the Endangered species list. Like the trillium, both plants are classified by the Smithsonian Institution as nationally threatened. According to botanists, Taylor Hollow is a rare undisturbed remnant of a mixed mesophytic forest that once covered thousands of acres in the region. The Conservancy acquired the 173-acre property in 1978 and manages it in cooperation with Vanderbilt University.

Florida panther: In recent years, population counts for the Florida panther (*Felis concolor coryi*) have ranged from 50 to 300. However, since most reported sightings come from a variety of sources, the Service's Florida Panther Recovery Team believes that these numbers may be vastly overestimated. The Nature Conservancy recently purchased a unique ecological area where well-documented cougar sightings suggest that the elusive feline may actually maintain a breeding population within the site's parameters. Called Banks Lake, the land encompasses the largest freshwater lake-swamp complex on the coastal plains of Georgia—3,540 acres. A proposed National Natural Landmark, Banks Lake is currently leased to the Service.

Mississippi sandhill crane: In 1972 the Service authorized a refuge in Jackson County, Mississippi, for the Endangered Mississippi sandhill crane (*Grus canadensis pulla*), a long-legged, 3½-foot-tall bird with gray plummage and a red crown. Unlike others in the crane family, the Mississippi sandhill does not migrate, so it cannot find suitable habitat along an extended flyway. The Conservancy sowed the seeds for the planned refuge in 1974 by purchasing 1,700 acres within the crane's habitat. Since then the organization has obtained 6,522 more acres for eventual transfer to the Service as part of the Mississipoi Sandhill Crane National Wildlife Refuge (see accompanying feature).

Dakota skipper butterfly: A Conservancy-owned preserve in Minnesota, Hole-in-the-Mountain Prairie presently contains 222 acres and harbors three rare butterflies—the pawnee skipper, the ottoe skipper, and the Dakota Skipper. The Dakota skipper butterfly (*Hesperia dacotae*), which has declined as the virgin tallgrass prairies have disappeared, is a candidate for listing as a federally Threatened species.

Sea Otter: Hunted almost to extinction for its pelt, the southern sea otter (*Enhydra lutris neris*) numbered only 60 individuals in 1914. Now protected from hunting under the Marine Mammal Protection Act and federally listed as a Threatened species, the sea otter has made a substantial comeback: a population of between 1,000 and 2,000 animals exists off the coast of northern California. Landels Hill-Big Creek on the Big Sur coast is a 4,000-acre Conservancy sanctuary that includes a four-mile stretch of coastline where the protected sea otters float just offshore. Big Creek also encompasses a pristine watershed, two perennial streams, natural springs, virgin Redwoods, and 32 distinct biological habitats.

American Crocodile: The Nature Conservancy has already purchased the first tract of land toward establishment of the Service's Crocodile Lake National Wildlife Refuge, a recently authorized 6,000-acre sanctuary for America's Endangered crocodile. While the alligator is prospering, its salt-water cousin, the American crocodile (*Crocodylus acutus*), is barely surviving. Only about two dozen nesting females are left. The results of three different, though coordinated, research projects—one by the National Park Service, another by the Florida State Game and Freshwater Fish Commission, and a third by the Florida Power and Light Company—show that the rare crocodilian can only be helped by protecting and managing its remaining habitat in the Keys and Florida Bay.

Indiana and gray bats: Hibernating and nursery roosts required by the Indiana bat (*Myotis sodalis*) and the gray bat (*Myotis grisescens*) have become so scarce that entire populations of both species have disappeared from certain previously used caves. It has been estimated that 90 to 95 percent of the total hibernating gray bat population, about 2 million, is now restricted to only five caves. Only 13 caves harbor about the same percentage of Indiana bats. The two Endangered mammals suffer, first, from human activities in and around vital caves, and secondly, from the use of pesticides. The Nature Conservancy has preserved four properties, two in Illinois, one in Ohio, and another in Oklahoma, that contain caves used by hibernating or nursing colonies of gray and Indiana bats.

(Bionote: Anne M. Byers is Associate Editor of The Nature Conservancy News, *as well as the Conservancy's Staff Writer. We are grateful for her contribution to the BULLETIN.)*

RULEMAKING ACTIONS

May 1980

CRITICAL HABITAT REPROPOSED FOR TWO TEXAS FISHES

The Service proposes to designate Critical Habitat for two species of fish —the Devil's River minnow (*Dionda diaboli*) and the Leon Springs pupfish (*Cyprinodon bovinus*)—vulnerable to habitat destruction within their remaining range (F.R. 5/16/80).

The minnow and pupfish were respectively proposed for listing as Threatened and Endangered, with Critical Habitat, on August 15, 1978. However, the Critical Habitat portions of the listing proposals were withdrawn on March 6, 1979, subsequent to procedural changes under 1978 amendments to the Endangered Species Act of 1973.

Devil's River minnow

Historically known from the Devil's River, San Felipe Creek, and Las Moras Creek in Val Verde and Kinney Counties, the Devil's River minnow is now restricted to remaining free-flowing portions of its original habitat due to modifications for flood control, agricultural, and recreational purposes. (The species is no longer known from Las Moras Creek.)

The minnow population in the lower portion of Devil's River was eliminated following the construction of Amistad Reservoir in 1968, while the population at the headwaters of Devil's River was extirpated as the result of groundwater removal.

The surviving population of Devil's River minnow in San Felipe is now threatened by the implementation of Federally sponsored flood control measures (potentially calling for Section 7 Consultation under the 1973 Act). Any future excessive groundwater pumping or surface diversion could also threaten remaining numbers by limiting flows in the Devil's River.

Leon Springs pupfish

Although originally known from Leon Springs west of Fort Stockton, Texas, the Leon Springs pupfish disappeared from this locality prior to 1938 (due to the damming, diversion, and poisoning of the spring), and was thought extinct. A separate population was rediscovered in Diamond Y Spring (and its outflow into Leon Creek) north of Fort Stockton in 1965, and appears in fairly good condition.

This remaining pupfish population is threatened by potentially devastating spills from nearby oil refineries, diminishing stream flows through excessive groundwater removal, and the introduction of harmful exotic fishes. (The release of sheepshead minnows (*Cyprinodon variegatus*) into Leon Creek in 1974 resulted in widespread hybridization with the closely-related *C. bovinus*, threatening the genetic purity of the pupfish. All of the sheepshead minnows have since been removed, although the pupfish habitat remains accessible and vulnerable to the release of exotics.)

Diamond Y Spring and its outflow, Leon Creek, in Pecos County are included in the proposed Critical Habitat determination.

Public Meetings/Comments Solicited

The public was invited to attend public meetings on the subject proposals on June 12 and 13, 1980. (Advance notice was provided in the May 1980 BULLETIN.)

The Service has drafted an impact analysis, and believes at this time that economic and other impacts of this proposed action are non-significant (under provisions of the 1978 Amendments and other applicable Federal laws). Upon completion, a final impact analysis will serve as the basis for a determination as to whether exclusion of any area from Critical Habitat designation is warranted (for economic or other reasons).

Comments, as well as biological and economic data, in response to these proposals should be submitted by July 15, 1980, to the Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.

SERVICE REVIEWS ANTIOCH INSECTS

The Service is reviewing the status of nine insect species known from the Antioch Dunes in Contra Costa County, California. They are: Middlekauff's katydid (*Idiostatus middlekauffi*), Antioch weevil (*Dysticheus rotundicollis*), Antioch robber fly (*Cophura hurdi*), Valley mydas fly (*Raphiomydas trochilus*), Antioch vespid wasp (*Leptochilus arenicolus*), Antioch tiphiid wasp (*Myrmosa pacifica*), Antioch sphecid wasp (*Philanthus nasalis*), Antioch andrenid bee (*Perdita scitula antiochensis*), and the yellow-banded andrenid bee (*Perdita hirticeps luteocincta*).

The Antioch Dunes ecosystem, which supports or formerly supported these nine species, has been almost completely destroyed by industrialization. [The Service recently acquired more than 55 acres of this ecosystem to protect three native Endangered species: Lange's metalmark butterfly (*Apodemia mormo langei*), Antioch Dunes evening-primrose (*Oenothera deltoides* ssp. *howellii*), and Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*). See the April 1980 BULLETIN.] The Antioch robber fly and vespid wasp are last known to have been collected in 1939; the Antioch weevil, tiphiid wasp, and sphecid wasp in the 1950's; the Middlekauff's katydid in 1965; the Valley mydas fly in 1974; and the Antioch and yellow-banded andrenid bees in 1977. Two species of insects found only at Antioch Dunes are believed to be already extinct. The Antioch katydid (*Nebuda extincta*) is known from a single specimen collected in 1937. Despite searches, no other specimens of this species or of the Antioch anthicid beetle (*Anthicus antiochensis*), which was last collected in 1953, have been obtained.

Interested parties may submit factual information on these species to the Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240, by September 1, 1980.

Coachella Valley Lizard

Continued from page 1

Status and Threats

Although the lizard is historically known from a 324-square mile area in Riverside County, habitat destruction resulting from urban and agricultural growth has restricted the species' range to approximately 200 square miles, of which less than 100 now provide suitable habitat. Since 1940, the human population of Coachella Valley has grown from 12,000 to over 100,000, and is projected to reach more than 150,000 by 1990. None of the lizard's habitat in the valley has been permanently preserved, and a review of current zoning plans indicates that all of its remaining range could eventually be developed.

The species has also been threatened by increasing off-road vehicle use—an activity that has been shown to significantly affect the density and biomass of lizard populations. Additionally, sand deposits in the area are being invaded by dense stands of Russian thistle (*Salsola iberica*), an introduced noxious weed, and the lizard's habitat has been further altered by the planting of Tamarisk trees (*Tamarix aphylla*)—collectively used as wind breaks to protect developed areas.

Several activities involving Federal agencies (and potentially calling for consultation with our Service as required under Section 7 of the Endangered Species Act) are presently known which may have an impact on the Coachella Valley fringe-toed lizard.

Proposed Area

The area proposed for determination as Critical Habitat includes approximately 11,920 acres (18 5/8 square miles) of privately owned land in Riverside County, bounded by Washington Street, Hidden Palms, and Thousand Palms Oasis and Canyon. Included in the area are wind-blown sand deposits that provide adequate shelter for the lizards as well as suitable habitat for their feeding, nesting, and hibernation.

The Service has drafted an impact analysis, and believes at this time that economic and other impacts of this proposed action are not significant (under provisions of the 1978 Amendments and other applicable Federal laws). Upon completion, a final impact analysis will serve as the basis for a determination as to whether exclusion of any area from Critical Habitat designation is warranted (for economic or other reasons).

Photo by C. Kenneth Dodd, Jr.

Critical Habitat for the Coachella Valley fringe-toed lizard comprises approximately 11,920 acres in Riverside County, California. Clumps of Russian thistle, covering the area pictured above, may be having a detrimental impact on the blow-sand habitat of the lizard.

Photo by Wilbur W. Mayhew

Tiny projections on the toes of the 4- to 5-inch long Coachella Valley fringe-toed lizard—a desert reptile evolutionarily related to Colorado and Mojave fringe-toed lizards—allow it to run easily over the sand. The lizard's body is flat, reducing wind resistance and enabling it to evade predators by "swimming" beneath the surface of the sand when threatened.

Public Meetings/Comments Solicited

The public was invited to attend a public meeting on the subject proposal on June 20 and a public hearing on July 7, 1980. (Advance notice was provided in the May 1980 BULLETIN.)

Comments, as well as biological and economic data, in response to this proposal should be submitted no later than July 28, 1980, to the Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.

CRITICAL HABITAT REPROPOSED FOR THREE CALIFORNIA BEETLES

Striving to protect the last remaining range of these rare insects from changing land use practices, the Service has proposed the determination of Critical Habitat for the delta green ground beetle (*Elaphrus viridis*), the Mojave rabbitbrush longhorn beetle *(Crossidius mojavensis mojavensis),* and the California elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (F.R. 5/2/80).

All three of the California beetles had been proposed for listing with designation of Critical Habitat on August 10, 1978. However, in line with substantive amendments to the Endangered Species Act, the Critical Habitat portions of these proposals were withdrawn on March 6, 1979. (The subject notices comply with all procedural requirements under the 1978 amendments.)

Mojave rabbitbrush longhorn

Proposed for Endangered classification, the Mojave rabbitbrush longhorn beetle now occurs at only one of five localities where it was previously known. Land-clearing and urbanization within the insect's range in Los Angeles County have accounted for the decline of this species.

Adult beetles feed on the pollen of, and mate on, flowers of composite shrubs. Changing land-use practices which could destroy the species' host plants within its restricted range will continue to threaten the survival of the insect unless its habitat is protected from loss.

California elderberry longhorn

Much of the riparian environment in the lower Sacramento and upper San Joaquin Valleys formerly inhabited by the California elderberry longhorn beetle has been destroyed by stream channelization, levee construction, and development of riverfront properties. Proposed for listing as a Threatened species, this beetle is now known only from the American River near its confluence with the Sacramento River, and from Putah Creek, Sonoma County.

Critical Habitat designation will help to protect areas containing stands of the elderberry, *Sambucus* spp., the plants upon which the beetle feeds and lays its eggs. Any alteration of riverside habitat that could destroy the species' host plant would threaten the survival of the insect.

This reproposal contains two areas not included in the initial Critical Habitat proposal where two of the largest known colonies of the species occur. (Most of the land contained in the Critical Habitat proposal is owned by the County of Sacramento, which has indicated its willingness to protect the beetle and its riparian habitat.)

Delta green ground beetle

Threatened status was proposed for this unique predacious beetle which occurs in vernal pools in Solano County, California. The insect is limited to the grassy edges of only two vernal pools south of Dixon, where it is threatened by potential agricultural conversion, drainage, and pipeline construction.

Recent bulldozing has modified the area around one of the vernal pools, and two projects (a water supply aqueduct and wastewater treatment plant) involving Federal funding and/or authorization are planned that could possibly impact essential habitat areas (potentially requiring Section 7 consultation under the Endangered Species Act).

Public Meetings/Comments Solicited

The public was invited to attend public meetings on the subject proposals on May 22 and 23, and public hearings on June 12 and 13, 1980. (Advance notice was provided in the April 1980 BULLETIN.)

The Service has drafted an impact analysis, and believes at this time that economic and other impacts of this proposed action are non-significant (under provisions of the 1978 Amendments and other applicable Federal laws). Upon completion, a final impact analysis will serve as the basis for a determination as to whether exclusion of any area from Crtical Habitat designation is warranted (for economic impact or other reasons).

Comments, as well as biological and economic data, in response to these proposals should be submitted to the Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.

TWO FISHES UNDER REVIEW

Two fishes, the orangefin madtom (*Noturus gilberti*) and the Roanoke logperch (*Percina rex*), are being reviewed by the Service to determine if they should be proposed as Endangered or Threatened species and if Critical Habitat should be designated. The Service published a notice of review for both species in the March 18, 1975, *Federal Register,* but believes it is now necessary to solicit any new information which has been gathered since then.

The orangefin madtom is thought to be restricted to the upper portion of the Roanoke River system in Virginia and North Carolina and the Craig Creek system in the James River watershed in Virginia. The species' range has been reduced by impoundments, turbidity, sedimentation, sewage, and chemical pollutants—all of which remain as threats, especially in the rapidly developing Roanoke-Salem Metropolitan Area.

The Roanoke logperch occurs in four small and widely separate populations in the Virginia section of the Roanoke River system. This species is threatened by pollution and stream alteration. The largest of the four populations, found in the upper Roanoke River mainstream, is subject to industrial pollution, accidental chemical spills, and increases in toxic urban run-off resulting from suburban expansion.

Comments and data should be submitted to the Regional Director, U.S. Fish and Wildlife Service, Department of the Interior, One Gateway Center, Suite 700, Newton Corner, Massachusetts 02158, on or before August 11, 1980.

RAZORBACK SUCKER PROPOSAL WITHDRAWN

In accord with 1978 amendments to the Endangered Species Act, the Service has withdrawn an expired proposal to list as Threatened without Critical Habitat, the razorback sucker (*Xyrauchen texanus*, F.R. 5/27/80). Under the amendments, a final rule to list a species must be published in the *Federal Register* no later than two years after the publication of the notice of the proposed rule. The amended Act also authorized a one-year suspension of all withdrawals until November 10, 1979.

The razorback sucker, known from Arizona, California, Colorado, Nevada, Utah, and Wyoming, was originally proposed on April 24, 1978, along with the bonytail chub (*Gila elegans*), which was listed as Endangered in a final rulemaking on April 23, 1980. The razorback sucker may not be reproposed for listing unless sufficient new information is available to warrant the proposal of a regulation.

THREATENED STATUS, CRITICIAL HABITAT PROPOSED FOR MOUNTAIN GOLDEN-HEATHER

Photo by E. Laverne Smith

Hudsonia montana, a low perennial shrub with needle-leaves and yellow flowers, is proposed as Threatened with Critical Habitat.

The Service proposes to list as Threatened, and to designate Critical Habitat for, mountain golden-heather (*Hudsonia montana*), a rare North Carolina plant (F.R. 5/29/80).

All known specimens of this low perennial shrub occur on or near Table Rock in the Pisgah National Forest, where the plant was first discovered in 1816. Today, *Hudsonia montana* and the fragile plant communities in which it occurs are threatened by human trampling, which has caused recent declines in the numbers of at least two populations.

The U.S. Forest Service is now in the process of developing a monitoring and habitat management plan for the species. While Forest Service regulations prohibit the removal or destruction of Threatened, Endangered, rare, or unique species from its lands, listing of the mountain golden-heather under the Endangered Species Act will offer additional protection to the species.

The proposed Critical Habitat includes all known populations of the *Hudsonia montana* in North Carolina, along with adjacent suitable habitat to allow for natural expansion.

H. montana was included in a July 1, 1975, notice of review on the basis of the Smithsonian Report to Congress listing this plant as one of those considered to be endangered, threatened, or extinct. Subsequently, the species was among approximately 1,700 vascular plants proposed for listing as Endangered on June 16, 1976. (This proposal was later withdrawn, as it was not finalized within time limits imposed under 1978 amendments to the Act. While both the notice of review and proposal included this species as *Hudsonia ericoides* ssp. *montana,* recent morphological, cytological, and population studies have confirmed *H. montana* as a distinct species.

Public Meetings/Comments Solicited

The public was invited to attend public meetings on the subject proposal on July 1, 1980 (as announced in the May 1980 BULLETIN).

The Service has drafted an impact analysis, and believes at this time that economic and other impacts of this proposed action are non-significant (under provisions of the 1978 Amendments and other applicable Federal laws). Upon completion, a final impact analysis will serve as the basis for a determination as to whether exclusion of any area from Critical Habitat designation is warranted (for economic or other reasons).

Comments, as well as biological and economic data, in response to these proposals should be submitted by July 28, 1980, to the Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.

Rulemaking Actions

ENDANGERED AND THREATENED SPECIES LISTS REPUBLISHED

The Service has issued a republication of the lists of Endangered and Threatened Wildlife and Plants, inclusive of all species listed as of May 10, 1980 (F.R. 5/20/80). Technical errors from the last republication (January 17, 1979) have been corrected and the lists have also been restructured.

A column has been added to indicate whether or not Critical Habitat has been designated for the species. Another column that has been added to the lists of wildlife and plants is "Historic Range," which replaces the old "Known Distribution." This column indicates, for informational purposes, the general known distribution of the species or subspecies as reported in the scientific literature. A column headed "Vertebrate Population where Endangered or Threatened" has been added to the wildlife list only, because populations of invertebrates and plants may not be listed under the Act. (For a discussion of the regulations governing listing of species and the new format of the U.S. Lists, see the March 1980 BULLETIN.)

Comments concerning this republication should be sent to the Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240. (Copies are also available, in limited supply, from the Service's Office of Publications at the same address.)

BOX SCORE OF SPECIES LISTINGS

Category	Number of Endangered Species			Number of Threatened Species		
	U.S.	Foreign	Total	U.S.	Foreign	Total
Mammals	35	251	286	3	21	24
Birds	67	145	212	3		3
Reptiles	12	55	67	10		10
Amphibians	5	9	14	2		2
Fishes	31	11	42	12		12
Snails	2	1	3	5		5
Clams	23	2	25			
Crustaceans	1		1			
Insects	6		6	3		2
Plants	49		49	7	2	9
Total	231	474	705	45	23	68

Number of species currently proposed: 35 animals (1 plant)
Number of Critical Habitats listed: 36
Number of Recovery Teams appointed: 68
Number of Recovery Plans approved: 36
Number of Cooperative Agreements signed with States: 36 (fish & wildlife) 4 (plants)

May 31, 1980

NEW PUBLICATIONS

The California Native Plant Society has come out with an *Inventory of Rare and Endangered Vascular Plants of California,* Special Publication No. 1 (2nd Edition). Over 1,300 plants are listed in this book. The cost is $7.50 plus tax for California residents. Write to the California Native Plant Society at 2380 Ellsworth, Suite D, Berkeley, California 94704.

Free copies of *The Rare Vascular Plants of Manitoba* are available from The Rare and Endangered Plants Project, Botany Division, National Museum of Natural Sciences, Ottawa, K1A 0M8. Copies of the previously published lists for Ontario, Alberta, Nova Scotia, and Saskatchewan are also available.

The Brown Pelican (Pelecanus occidentalis): A Bibliography is available, for $3.00 prepaid, by writing to R.W. Schreiber, Natural History Museum, 900 Exposition Blvd., Los Angeles, California 90007. This reference contains over 900 citations.

ENDANGERED SPECIES TECHNICAL BULLETIN

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

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