



ENDANGERED SPECIES TECHNICAL BULLETIN

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

ES Treaty Permits Required May 23; Enforcement Starts

The United States will begin enforcing the Convention on International Trade in Endangered Species of Wild Fauna and Flora on May 23, 1977.

As of that date, permits or certificates will be required for international trade in all species listed in appendixes I, II, and III of the Convention. Regulations setting up a system for obtaining permits were published in the February 22, 1977 issue of the *Federal Register*.

(Copies of the regulations are available from the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240.)

A list of all the species protected by the Convention is included with the permit regulations. This list is similar to the list of species protected by the Endangered Species Act of 1973, but is not identical. For example, although Appendix II of the Convention lists all species of orchids, the act does not yet provide protection for plants. Furthermore, listing of more than 1,850 plants under the act is pending, but only a few orchids are included in this group.

General Policies

The regulations establish general U.S. policies for implementing the Convention. Important points include the following:

- Some type of permit or documentation will be required for international trade in all species listed by the Convention, even if the species originates in a country that is not a party to the Convention. Currently, 34 nations are party to the treaty, and the goal is to have as many countries as possible adopt the same set of trade requirements.

- Certificates of origin must be issued for species being reexported. This requirement is intended to prevent the "laundering" of Endangered wildlife and plants through third countries.

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Fish and Wildlife Service Photo by Don Reilly

Timber Wolf Reclassification Debated

Management of the eastern timber wolf (*Canis lupus lycaon*) has become a controversial issue in northern Minnesota, the wolf's last stronghold in the Lower 48 States.

Local residents and the Minnesota Department of Natural Resources are urging that the wolf be removed from the list of Endangered species, contending that the wolves are depleting deer herds and ranging into settled areas where they are attacking livestock and household pets. Despite Federal penalties for killing Endangered wildlife, there is an increasing number of reports of wolves being illegally shot and trapped as predators by farmers and hunters.

Some conservation organizations, on the other hand, are opposed to any change in the wolf's status on the grounds that the low numbers of the species in the United States justify continued complete protection. Other conservationists, though, favor a middle course of reclassifying the species to Threatened so that some wolves can be taken in the interests of better management and fostering public tolerance.

Many of the biological issues concerning the future of the wolf have crystallized with publication of a draft recovery plan by the Eastern Timber Wolf Recovery Team appointed by the Fish and Wildlife Service. The team, headed by Ralph E. Bailey of the Michigan Department of Natural Resources, recommends reclassification of the wolf to Threatened status in Minnesota. Its

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Wolf Rulemaking Due

Recommendations of the Eastern Timber Wolf Recovery Team do not necessarily represent the official position of the Fish and Wildlife Service. Any final plan is subject to the approval of the director of the Service. As this issue of the BULLETIN goes to press, a proposed rulemaking on the eastern timber wolf is being prepared by the Service for publication in the *Federal Register*. Future issues of the BULLETIN will report on the disposition of this proposal.

Permits (continued from page 1)

• Permits will be needed only for Convention species involved in international trade. Interstate shipments are not affected unless they involve species that also are protected by U.S. law.

• In the case of species protected by both U.S. law and the Convention, a single permit application will be sufficient for both. Application requirements for U.S. Endangered and Threatened species permits generally are stricter than for Convention permits. This procedural simplification also extends to species protected by both the Convention and the U.S. Marine Mammal Protection Act.

Application Approval

Rules have been established for the approval of permit applications. Certain findings must be made by a so-called management authority and a scientific authority in each country before the management authority can issue a permit. In the United States, the management authority is the chief of the Federal Wildlife Permit Office and the scientific authority is a Federal interagency organization created by Executive Order 11911 (1976) and supported by an executive secretary and a staff that

is provided by the Fish and Wildlife Service.

Combined Listing

The Fish and Wildlife Service currently is preparing a new combined list of all species covered by various Federal laws. It is expected to be published later this year.

The Service does not intend to list as Endangered or Threatened every species that is listed by the Convention, because the criteria for adding species to U.S. listings are not the same as those of the Convention. Species will be examined on an individual basis to determine if those listed under one system qualify for the other.

Background

U.S. permit regulations were promulgated following a meeting of treaty nations in Berne, Switzerland, last November to bring about rapid implementation of the treaty. Negotiated in 1973, the treaty is intended to eliminate commercial trade as a cause of the decline in any species.

To date, permit regulations have been drawn up and put into effect by Switzerland, the United Kingdom, Canada, and West Germany.

Treaty Improvements Under Consideration

A number of actions are being considered to improve the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. They pertain to the shipment of living specimens, establishment of animal rescue centers, exchange of marine specimens, identification of specimens, and amendments to the Convention's Appendix I and Appendix II listings.

An agenda of issues was drawn up at a five-nation steering committee session held February 21-22 at Morges, Switzerland. Treaty nations will meet at a special session in October at Geneva to formulate recommendations to be acted upon by the full Convention next year. Richard M. Parsons, chief of the Federal Wildlife Permit Office, represented the United States on the steering committee. Representatives also were present at the meeting from Canada, Ecuador, Ghana, and Switzerland.

Pelican Recovery Team Seeks Assistance

The Eastern Brown Pelican Recovery Team is trying to determine the role played by the persistent and toxic pesticide Endrin in the demise of the brown pelican on the Louisiana-Texas coast during the late 1950's and early 1960's.

The team is aware of some Endrin pollution in the lower Mississippi River during that period, but it has not yet found direct evidence of high Endrin levels in pelicans or their eggs along the Gulf coast in those years.

Having learned recently that it is feasible to analyze museum specimens for Endrin residues, the recovery team currently is attempting to locate brown pelican eggshells and skins that were obtained during the 1957-62 period along the gulf coast between Dauphin Island, Alabama, and Tampico, Mexico.

Says team leader Lovett E. Williams, Jr.: "Specimens made available to us will not be destroyed. The insides of the eggs will be rinsed with acetone and hexane. With regard to skins, small pieces of skin and muscle will be taken in such a way that the appearance and scientific value of each specimen will not be seriously altered."

He urges anyone with knowledge of such specimens to write to him at the following address: Lovett E. Williams, Jr., Eastern Brown Pelican Recovery Team, Wildlife Research Laboratory, 4005 South Main Street, Gainesville, Florida 32601.

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Debating Biological Needs of the Eastern Timber Wolf

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report offers a plan for containing the wolf in its primary and peripheral ranges, plus increasing the availability of wild prey.

Population Estimates

The plan is based upon there being an estimated population of 1,000-to-1,200 wolves in Minnesota (according to a 1975-76 count by L. David Mech of the Fish and Wildlife Service). This estimate indicates that the population may have largely recovered from a 40-percent decline in 1971-72 and that the wolf is in no immediate danger of extinction in that State.

Outside of Minnesota, northwestern Wisconsin and Michigan's upper peninsula are believed to harbor a few individuals, and Isle Royal National Park in Lake Superior has a stable population of about 40. A vast population of eastern timber wolves—perhaps as many as 10,000—survives in the forests of southern Ontario and Quebec.

Management Zones

In the recovery plan, the team has identified five management zones, each coextensive with a portion of the wolf's Minnesota habitat. They are shown on the accompanying map and are described as follows:

- Zones 1 and 2 include parts of Superior National Forest and Boundary Waters Canoe Area. Together, these zones constitute about 4,300 square miles of primary range that contain between 530 and 615 wolves—about half of Minnesota's total wolf population.

- Zone 3, which includes the Beltrami Island Wildlife Management Area, consists of about 3,400 square miles of primary range. Its wolf population is estimated at 205.

- Zone 4 is characterized as a peripheral zone. Covering nearly 21,000 square miles, it is believed to contain between 280 and 410 wolves.

- Zone 5 covers the rest of the State, including the principal areas of human settlement.

Recovery Plan Issues

Major issues addressed in the plan are (1) classification, (2) creation of sanctuaries, (3) control measures, (4) enhancement of the wolf's natural food supply, and (5) reestablishment.

1. Classification Change Questioned:

The recovery team's vote was 8-0 to recommend retention of the Endangered classification for Lower 48 wolf populations outside Minnesota. It was 7-1 on recommending a change to Threatened status for the Minnesota

population, with the Minnesota Department of Natural Resources casting the lone dissenting vote. The department says the wolf should be declassified entirely in the State.

The recovery team's rationale for recommending Threatened status is that, while the wolf has survived (despite bounties and year-round hunting and trapping in former times), the future is unpredictable. Says the team:

"For example, widespread industrialization, mineral exploitation, and general development could threaten much of the wolf's remaining range. . . . Additional roads, railroads, power lines, mines, and tourist facilities could further carve up much of northern Minnesota."

But the Minnesota Department of Natural Resources feels that the trend in the northeastern part of the State is "toward more environmental protection, not less." The department points out that much of the wolf's range is public land and protected, thereby ruling out significant changes in land use; if laws are

revised to drastically alter land use, the wolf could then be returned to the appropriate list.

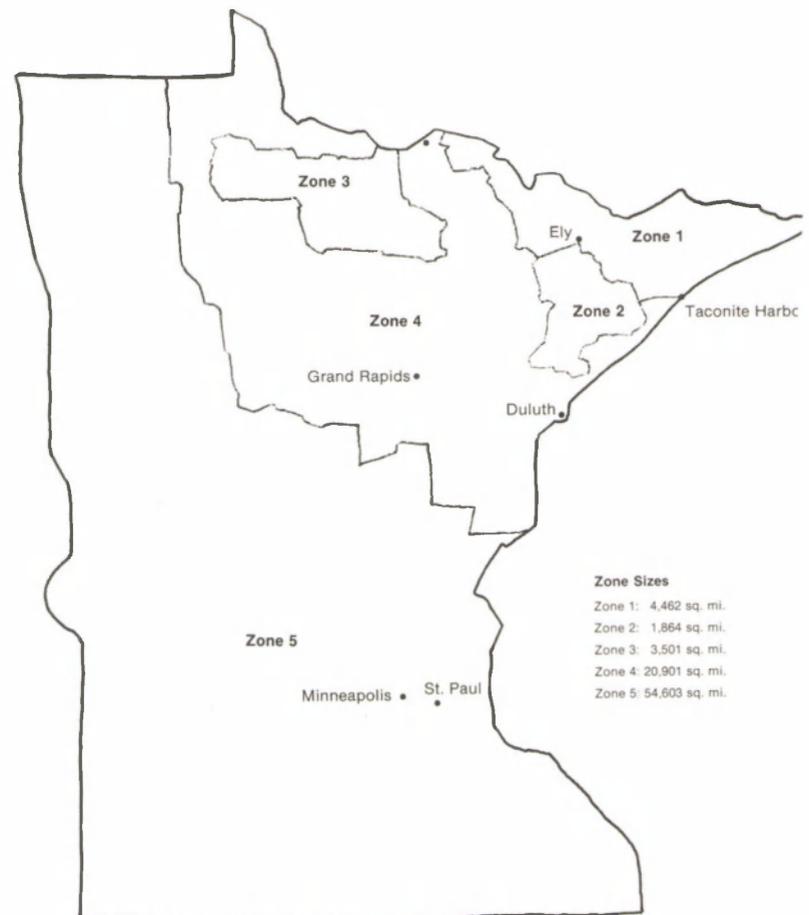
The Defenders of Wildlife and nine other national conservation organizations are opposed to reclassifying the Minnesota wolves as Threatened. They argue that this step "runs counter" to the purpose of the law to "insure to the extent possible, restoration of endangered species to the point where they are no longer endangered or threatened."

But the National Wildlife Federation supports the reclassification, except for the Zone 1 northeastern population, which it suggests could be retained as Endangered. The basis for this recommendation is the recovery team's proposal to allow wolf numbers in Zone 1 to fluctuate naturally.

The Minnesota regional office of the National Audubon Society endorses the change to Threatened because it makes "good sense," but adds that this classification for the wolf should be reviewed every two years.

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Proposed Timber Wolf Management Zones in Minnesota



Howard Associates Map

Wolf (continued from page 3)

2. Are Sanctuaries Needed?: Under the recovery plan, Zone 1 would become a wilderness sanctuary where wolf packs could develop a natural social structure and be allowed to vary in numbers without population management. They would be afforded complete protection, with very little, if any, taking of individual animals.

Zones 2 and 3 would become "managed sanctuaries" with the initial objective of increasing the population from the present estimated 1 wolf per 12-17 square miles to 1 wolf per 10 square miles. This would bring the population up to about 530 wolves total for the two zones.

The plan recognizes that, during severe winters, wolves can contribute to the depletion of local deer herds. To keep deer and wolf numbers high, the plan calls for consideration of artificially reducing wolf numbers in the event the deer herd declines below the number required to maintain the 1 per 10 square miles wolf ratio. Populations of wolf-prey would be monitored annually and goals revised if necessary.

The Minnesota Department of Natural Resources is not in favor of the Zone 3 sanctuary, claiming an increase in wolves to 1 per 10 square miles would "greatly intensify depredation of livestock and other domestic animals as well as depress the now stable deer population." Most of the adjacent land is used for livestock raising. The department adds:

"Let us not forget the timber wolf is a large and effective carnivore with a high reproductive capability. If the livelihood

of our northern residents as well as the deer hunting opportunity of many citizens is jeopardized, the attitude of the majority, now cautiously supportive or at least noncommittal, could be pushed into the anti-wolf ranks and 25 years of progress would be lost."

Neither the recovery plan draft nor any of the comments provide data on the actual losses of livestock and other domestic animals to wolves. Nor have any public opinion polls regarding the wolf been made available in connection with this discussion.

3. Control Measures At Issue: In the peripheral Zone 4, the recovery plan would set a goal of 1 wolf per 50 square miles, or approximately 400 wolves. Excess wolves, according to the plan, would be controlled through a legal hunting and trapping harvest. The recovery team estimates that 100 wolves could be harvested in the first year of management. In addition, the team estimates 60 wolves would be taken under a damage control program and another 60 would be killed illegally, for a total annual take of 220 wolves.

The Defenders of Wildlife objects to the sport harvest as being contrary to the Endangered Species Act because the plan does not offer alternative methods of reducing wolf numbers. It requests that the harvest idea be stricken from the plan. Likewise, the conservation organization believes that the damage control program should employ better livestock management, livetrapping, and transplanting techniques instead of relying on the killing of wolves.

Regarding illegal killing, the organization says the plan "in effect encourages"

the practice, and asks how the team arrived at the estimate of 60 and how it would ensure no more than that would be taken illegally.

4. Feeding the Wolves?: White-tailed deer (*Odocoileus virginianus*) are the most important prey of the wolf, along with moose (*Alces alces*) and beaver (*Castor canadensis*). In recent years, deer numbers have declined in northern Minnesota owing to winter severity plus deterioration of habitat caused by forest maturation and succession. There are some indications wolves also have contributed to the decline.

As the number of wolves has rebounded and deer herds have gone down, the possibility has arisen that wolves will increasingly disperse from the primary and peripheral ranges into settled areas and prey upon livestock and domestic animals. This, in turn, could lead to increased public hostility toward the wolf, thereby swaying public opinion against conservation of the species.

Consequently, the recovery team lists as one of its most important recommendations the improvement of deer habitat to increase prey for the wolf. It recommends rejuvenation of mature forests through cutting and/or fire. This practice, while expensive, would also improve habitat for other types of wildlife, game, and non-consumptive recreational uses.

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Eastern Timber Wolf (*Canis Lupus Lycaon*)

Adult eastern timber wolves weigh anywhere from 50 to 100 pounds, with males heavier on average than females. Their coats usually are mixed gray fur, but some specimens have been noted that are predominantly black or white.

Most wolves live in family groups or packs consisting of two-to-eight members, although packs of up to twenty members have been reported. Each pack inhabits an area of 50-to-120 square miles or more and tends to be territorial.

Within each pack there is a dominance hierarchy, and usually only the top-ranked male and female breed. Pups are produced in late April or early May. Litters average five pups under good conditions, and some packs may be even more productive.

With one litter of six pups, a wolf pack of two-to-six animals can theoretically double or triple its size annually, allowing wolf populations to build rapidly. A study in Alaska by L. David Mech has demonstrated that at least 50 percent of the wolf population must be taken each year just to maintain the previous density.

The drastic reduction of the eastern timber wolf has occurred mainly as a result of direct eradication accompanying the settlement of the land.

Three other subspecies of wolf that have historically occurred in the Lower 48 States are currently listed as Endangered. The status of the Northern Rocky Mountain wolf (*Canis lupus irremotus*) is uncertain—individuals are seen occasionally in the subspecies' historical range from southern Alberta to Utah and Colorado, but these could be individuals that have escaped or been released from captivity. A remnant population of the Mexican wolf (*C. l. baileyi*) is apparently hanging on in northern Mexico, but the Texas wolf (*C. l. monstrabilis*) is probably extinct. The red wolf (*Canis rufus*) is a distinct species from the southeastern United States that is also on the verge of extinction.

Other subspecies of wolves in Canada and Alaska are faring much better. The 5,000-to-10,000 Alaskan wolves still occupy most of their original habitat and are not considered Endangered or Threatened. In Canada, wolves are also holding their own in most provinces. Only in the Northwest Territories is there a bounty; unlimited taking is permitted in all provinces except Alberta and British Columbia, which regulate the hunting and trapping of wolves.



Fish and Wildlife Service Photo by C. J. Bayer

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. 3/14/77)—given in the BULLETIN list the month, day, and year that the rulemaking was published in the *Federal Register*.



Bureau of Land Management Aerial Photo

Wind curving off the Last Chance Mountains (in background) has created the Eureka Dunes' unique formation in the California desert. Rainfall and an unusual water table supply

the moisture to support the dune grass, which stabilizes the sand, and other native plants. The off-road vehicle ban is intended to keep dunes from drying up.

Eureka Dunes' Plants Spared by BLM Vehicle Ban

The massively contoured Eureka Sand Dunes, one of California's unique desert ecosystems, are being protected from the further effects of dune buggies by a recent Bureau of Land Management (BLM) vehicle closure order.

Two candidate Endangered species of endemic plants—Eureka dune grass (*Swallenia alexandrae*) and the Eureka evening primrose (*Oenothera avita* ssp. *eurekaensis*)—grow on the dunes along with a number of flowering annuals, including the Eureka locoweed (*Astragalus lentiginosus* var. *micans*), which is regarded as endangered by the California Native Plant Society.

Recently, four new insects have been discovered in the dunes, which are located on BLM national resource lands in remote Eureka Valley near the northwest corner of Death Valley National Monument. These still undescribed species, as well as others already identified, may eventually be listed as Endangered by the Service.

Enforcement A Problem

The presence of Endangered flora and fauna figured prominently in the BLM decision to close the dunes to off-road vehicles (ORVs) last October. It was the first time the agency has closed such an area to protect Endangered plants; for some time the agency has had policies and guidelines for protecting Endangered wildlife (see box).

The BLM is giving consideration to

designating the dunes as an "outstanding natural area" to encourage more scientific study and protection. Under

BLM Issues ES Policy Manual

The Bureau of Land Management (BLM) has published a new manual containing the agency's internal procedural guidelines for protecting Endangered and Threatened species of wildlife listed by the Federal government and by the States.

The guidelines apply to all programs and actions related to the national resource lands, the Federal subsurface mineral estate, and the submerged lands of the outer continental shelf administered by the BLM. Also covered by the guidelines are the habitats of wildlife considered by States to be extinction-prone and in need of protection or enhancement. The policies do not specifically cover Endangered and Threatened plants.

Included in the 56-page document is a discussion of the methods the BLM is to employ in complying with the Endangered Species Act of 1973 and a statement of the responsibilities of BLM officials in this regard. Copies of *BLM Manual Section 6840—Threatened and Endangered Wildlife* may be obtained by writing to Bureau of Land Management, U.S. Department of the Interior, Washington, D.C. 20240.

the current management plan, the dunes are being kept open to all forms of recreation, except vehicles. Residents report that, since closure, ORVs occasionally have invaded the area and that enforcement of the vehicle ban needs to be improved.

Damage to Slopes

Conservationists have become increasingly concerned about the once-solitary dunes in that the area has grown in popularity since the 1960's as a place to run buggies, motorcycles, and other ORVs. What makes the dunes attractive for ORV sport is their steep slopes. Over the millenia, wind curving off of the Last Chance Mountains has piled sand into an oblong ridge that is three miles long, about a mile wide, and up to 680 feet high.

As ORVs have grown more powerful and able to negotiate the steepest slopes, they have become potentially more damaging. Wheels churning through the sand cut the dune grass rhizomes that enable the grass to spread and stabilize the slopes. With increasing breakage of the surface by wheels, it also was feared the dunes would dry out and lose their plentiful vegetation and the fauna dependent upon it. (The grass affords shelter to the endemic blue-green weevil (*Miloderes nelsoni*), and the grass' large grains are consumed by some of the fauna.)

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Dunes (continued from page 3)

The dunes are able to support a large flora despite the arid climate, because they apparently catch enough rainfall from eastward-moving storms. The dunes' structure creates an unusual water table, which allows water to percolate just below the surface.

Another strong argument for banning vehicles is the presence near the base of the dunes of fragile archeological sites containing the artifacts of ancient Indian culture. There is evidence that Indians once irrigated an alluvial plain and maintained some habitations here.

In addition to the Endangered endemics, there is an abundant and varied flora on the dune borders that receive the greatest amount of moisture. An almost pure strand of Indian rice grass (*Oryzopsis hymenoides*), covering some 40 acres, is located on the eastern side.

A Botanist's View

The dunes have been extensively investigated by botanist Mary DeDecker of Independence, Calif., who represented the California Native Plant Society on the BLM committee that inventoried the area for the new land use plan. She reports:

"The showiest flower displays are the fields of desert-mallow (*Sphaeralcea ambigua*) and woolly desert-marigold (*Baileya pleniradiata*). The richly colored fields of desert-mallow are best developed around the northeast corner of the dunes. A walk through them will reveal evening-primroses and a variety of other plants. Far to the south, about midway on the east side of the dunes, may be seen an extensive field of yellow, the woolly desert-marigold. This is well worth a hike to see it.

"*Coldenia plicata*, a small perennial, is common on the lower slopes and bordering sandy flats. Its geometric pattern makes a pretty groundcover, but instead of stabilizing the sand it moves with it. It travels with the wind as far as its long, threadlike foot will allow, anchored by a deeply buried 'capsule' While many of the dune plants come from the southern deserts, *Chaetadelphia wheeleri* comes from the north and may reach its southerly limit here. Another surprising resident is the least snapdragon (*Antirrhinum kingii*), a dainty annual found among the mallow. Many species are to be expected here, such as the common brown-eyed evening-primrose (*Camissonia claviformis* subsp. *tunerea*), and sand-verbena (*Abronia turbinata*), kidney-leaved buckwheat (*Eriogonum reniforme*), Spanish needle (*Palafoxia linearis*), yellow-flowered spurge (*Euphorbia ocellata* var. *arenicola*), and *Cleome sparsifolia*.

"Allscale (*Atriplex polycarpa*) is the dominant shrub over much of the area bordering the dunes, while creosote bush (*Larrea tridentata*) descends the



Photo by Mary DeDecker

Importance of the Eureka Dune grass to the dunes' ecology has made it a candidate Endangered species.



Photo by Mary DeDecker

Eureka evening primrose, another Endangered candidate, is one of the dunes' showiest flowers.

fans to meet it. Dotted dalea (*Dalea polyadenia*) is common with an occasional Fremont dalea (*Dalea fremontii*). The form of the prince's plume found here (*Stanleya pinnata* subsp. *inyensis*) is a distinct shrub. Its type locality is the north end of the dunes."

Background

The Eureka Dunes were designated a special design area in 1973 to evaluate the impacts of off-road vehicle use and

to develop a management plan. The committee to study the area was formed in 1974. In January 1976, the BLM issued a proposed land use plan that would have allowed ORVs to use the high ridge part of the dunes and close the remainder. This plan was opposed by conservationists and members of the California Congressional delegation. The BLM subsequently issued another environmental report, which recommended total closure of the dunes to vehicles.

Rulemakings

(continued from page 3)

seemingly tame and tolerant of brief disturbances, it eventually abandoned its habitat as fishing and other human activities increased.

In May 1973, Karl W. Kenyon conducted an extensive survey of the species' former habitat for the U.S. Department of the Interior. Although he failed to find any survivors, he did document the existence of the Guadalupe fur seal (*Arctocephalus townsendi*) and the Juan Fernandez fur seal (*Arctocephalus philippi*). All three species hitherto had been considered as probably extinct. Consequently, it is at least possible that the Caribbean monk seal also survives.

Comments are due by April 18, 1977. They should be addressed to the Director, National Marine Fisheries Service, U.S. Department of Commerce, Washington, D.C. 20235.

Connecticut Listings Now Available

The Connecticut Department of Environmental Protection has published a report entitled *Rare and Endangered Species of Connecticut and Their Habitats*. Prepared by Joseph J. Dowhan and Robert J. Craig, the report includes a comprehensive, annotated listing of the State's rare, threatened, and endangered species. In addition, it identifies the habitats and ecoregions that support these species.

The species listed include 275 higher plants, 7 fish, 8 reptiles, 5 amphibians, 50 birds, and 11 mammals.

The 137-page publication has been prepared as Connecticut Geological and Natural History Survey Report of Investigations No. 6. It is available for \$1 postpaid (Connecticut residents: \$1.07, including sales tax) from Sales and Publications, Connecticut State Library, Hartford, Connecticut 06115.

Florida Biota

The Florida Audubon Society has recently prepared a report entitled "Inventory of Rare and Endangered Biota of Florida." The accounts of individual species in this document were written by members of the Florida Committee on Rare and Endangered Plants and Animals, under the chairmanship of Dr. James Layne.

The 1,152-page report is scheduled to be published in paperbound form. In the meantime, an interim microfiche version is available for \$5 from the Florida Audubon Society, P.O. Drawer 7, Maitland, Florida 32751.

BOX SCORE OF SPECIES LISTINGS

| Category | Number of Endangered Species | | | Number of Threatened Species | | |
|--------------------|---------------------------------|------------|------------|---------------------------------|-----------|-----------|
| | U.S. | Foreign | Total | U.S. | Foreign | Total |
| Mammals | 36 | 227 | 263 | 2 | 17 | 19 |
| Birds | 66 | 144 | 210 | 1 | | 1 |
| Reptiles | 8 | 46 | 54 | 1 | | 1 |
| Amphibians | 4 | 9 | 13 | 1 | | 1 |
| Fishes | 30 | 10 | 40 | 4 | | 4 |
| Snails | | 1 | 1 | | | |
| Clams | 22 | 2 | 24 | | | |
| Crustaceans | | | | | | |
| Insects | 6 | | 6 | 2 | | 2 |
| Plants | | | | | | |
| Total | 172 | 439 | 611 | 11 | 17 | 28 |

Number of species currently proposed: 91 animals
1850 plants (approx.)

Number of Critical Habitats proposed: 38

Number of Critical Habitats listed: 6

Number of Recovery Teams appointed: 57

Number of Recovery Plans approved: 8

Number of Cooperative Agreements signed with States: 17

February 28, 1977

Wolf (continued from page 4)

Under extreme circumstances, such as a series of severe winters, the team says, "it may be biologically sound to temporarily reduce or prohibit harvesting of various prey species." This would benefit future game harvests as well as the wolf.

Unfortunately, this proposal has been misconstrued in the press as a plan to "close the deer season to feed the wolves."

The Minnesota Department of Natural Resources says the recovery plan should spell out that closure of the deer season would be considered "only if a habitat program and a timber wolf reduction program, for some unforeseen reason, should fail." Such closure would be considered only on the basis of the deer population itself, says the department, and would be a State decision.

The recovery team recommends possible reintroduction of the woodland caribou (*Rangifer tarandus*) as an alternative wolf prey species. Caribou last inhabited the State in 1937, but a large amount of bog habitat favored by the species remains in northern areas, making reintroduction appear feasible.

Durward L. Allen, professor of wildlife ecology at Purdue University, is skeptical of both the habitat rejuvenation and caribou proposals. He says that "it is an open question whether cutting and burning can be carried out with available funds and without great opposition from the people who regard these as great intrusions into an important recreation area."

Professor Allen adds:

"The climax forest is potential caribou range, but the deer and the wolf need early successions in which to survive. I doubt that the proposed introduction of caribou has much pertinence to the needs of the wolf, or that it can be successful under conditions favoring the wolf."

5. Wolf Reestablishment?: The recovery team recommends a cautious examination of problems inherent in reestablishing the timber wolf in other areas of its former range, such as northern Michigan and Wisconsin. Research is suggested to select areas that may be ecologically and socially receptive, and to investigate the feasibility of transplants through use of packs and nonrelated wolves.

But the team concedes any such reintroduction is bound to be controversial, both from the standpoint of transplanting wolves and controlling them later. Research very well could reveal that reestablishment of the wolf in other areas is not "prudent," the team says, but the concept should be explored nonetheless in the long-term biological interest of the wolf.

Development of a Final Plan

Discussion of the draft version of the recovery plan, together with additional comments, will provide the basis for development of a final plan and subsequent action by the Fish and Wildlife Service.

Rulemaking Actions February 1977

Critical Habitat for Six California Butterflies

To protect remaining populations of six species of butterflies, several areas of coastal California have been proposed by the Service for listing as Critical Habitat (F.R. 2/8/77).

All six species have been listed as Endangered since 1976 (see July 1976 issue of BULLETIN). They inhabit coastal areas that are being encroached on by economic and residential development. Critical Habitat determination is considered essential to the species' survival, which depends on the maintenance of sufficiently large areas containing their caterpillar-stage food plants and adult-stage nectar plants.

The species and areas are as follows:

1. Lotis blue butterfly (*Lycaeides argyrognomon lotis*): Area in Mendocino County near Pine Grove.

2. Lange's metalmark butterfly (*Apodemia mormo langei*): Area along the San Joaquin River in Contra Costa County.

3. San Bruno elfin butterfly (*Callophrys mossii bayensis*): Portion of San Bruno Mountains, in San Mateo County.

4. Mission blue butterfly (*Icaricia icarioides missionensis*): Twin Peaks zone in San Francisco County, plus a large portion of the San Bruno Mountains, in San Mateo County.

5. Smith's blue butterfly (*Shijimiaeoides enoptes smithi*): Elongate strip of coastal sand dunes along shore of Monterey Bay between Del Rey Creek and the Salinas River, in Monterey County.

6. El Segundo blue butterfly (*Shijimiaeoides battoides allyni*): Area in Los Angeles County on the western undeveloped portion of Los Angeles International Airport, and a two-acre area of natural sand dunes adjoining El Segundo Boulevard (also in Los Angeles County).

In proposing Critical Habitat status for these areas, the Service emphasizes that additional areas may be proposed for listing in the future.

Comments on this proposed rulemaking are due by April 8, 1977.

Service Proposes Critical Habitat for Two Plants

An area along the San Joaquin River in Contra Costa County, California, has been proposed for listing as Critical Habitat for two plants that live in the same habitat as the Endangered Lange's metalmark butterfly (F.R. 2/8/77).

The Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*) and the Antioch Dunes evening primrose (*Oenothera deltoides* ssp. *howellii*), which are proposed for Endangered status (F.R. 6/16/76), are native to an area that has been subject to major industrial development.

The plants' survival depends upon maintenance of sufficiently large areas of the proper soil type and exposure, as well as the presence of appropriate insect pollinators.

This area has also been proposed as Critical Habitat for Lange's metalmark butterfly (see accompanying story).

Comments are due by April 8, 1977.

Caribbean Monk Seal

The Caribbean monk seal (*Monachus tropicalis*) has been proposed for Endangered status in a joint notice of rulemaking by the National Marine Fisheries Service and the Fish and Wildlife Service (F.R. 2/16/77).

The species already may be extinct, but the proposed rulemaking is intended to provide protection in the event that surviving members are discovered.

The Caribbean monk seal formerly was found on the shores and islands of the Gulf of Mexico and the Caribbean Sea. Sluggish on land and not easily alarmed or fearful of man, it was successfully hunted for its hide and oil by early Spanish colonists and later generations.

By 1952, its known occurrence was limited to Jamaican waters and Seranilla Bank in the western Caribbean.

Indiscriminate killing was a major factor in the decline of the species. A contributing factor was human encroachment on the species' feeding grounds, hauling-out beaches, and pupping areas. Although the seal was seemingly tame and tolerant of brief

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