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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

INCREASED NUMBER OF NATIONS PARTICIPATE IN CITES MEETING

Delegates from 50 out of the 67 nations party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), as well as 16 nonparty delegations, were present at the third biennial meeting of the treaty members last month. At the 1979 meeting in Costa Rica, delegates from 34 out of 51 CITES nations, plus 16 nonparty delegations, participated.

Meeting from February 25 through March 8, 1981, in New Delhi, India, the member delegates discussed and voted on numerous proposals affecting implementation of the treaty and revisions of the lists of species it protects. Members of 8 international organizations and 72 nongovernmental organizations, nearly half of which were from the United States, contributed to general discussions.

Ronald E. Lambertson, Associate Director-Federal Assistance, who headed the official U.S. delegation, summarized the objectives of the U.S. delegation as follows: (1) To place emphasis on administrative actions to properly implement the CITES; (2) to stress the function of CITES as a trade convention designed to control detrimental utilization of wild fauna and flora, rather than to preclude trade in wild specimens; and (3) to resist broad listings of species on the appendices without meeting established criteria. Regarding the accomplishment of these objectives, Lambertson stated, "We were at least partially successful in achieving all of our objectives. We were particularly successful, however, in achieving our first objective of making the Convention work. With our strong support, a number of actions were taken in this area."

Other members of the U.S. delegation were: Richard M. Parsons (alternate head), Chief, Wildlife Permit Office, Service; Clark Bavin, Chief, Division of Law Enforcement, Service; Jeffrey Curtis, counsel, Subcommittee on Fisheries and Wildlife Conservation and the Environment, House Merchant Marine and Fisheries Committee, U.S. House of Representatives; Joseph Dowhan, botanist, Office of the Scientific Authority, Service; George A. Furness (secretary of delegation), Deputy Director, Office of International Conferences, U.S. Department of State; William S. Huey, Natural Resources Department, State of New Mexico; Richard Jachowski, Chief, Office of the Scientific Authority, Service; Dennis Johnsen, scientist with the National Institutes of Health, U.S. Embassy in India; Fred L. Jones, Secretarial observer, Department of the Interior; Arthur Lazarowitz, specialist, Federal Wildlife Permit Office, Service; Thomas McIntyre III, Animal and Plant Health Inspection Service, U.S. Department of Agriculture; and Thomas Parker, Jr., specialist, International Environmental and Conservation Affairs, U.S. Department of State.

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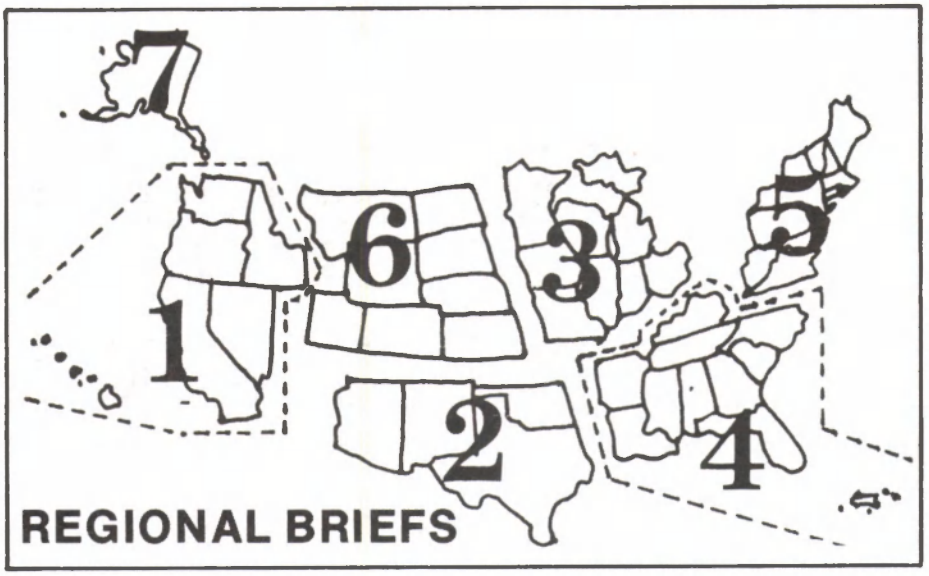
Negotiated in 1973, the Convention essentially prohibits commercial import and export of species listed under its Appendix I (those critically jeopardized by trade) and restricts export of those listed under Appendix II (potentially threatened species). Working together, a scientific and management authority in each nation must approve import and export permits for trade in species protected under the international treaty.

Courtesy National Zoological Park, Smithsonian Institution

The scarlet macaw (Ara macao), perhaps the most colorful and best known member of the parrot family, is now protected under CITES. Many parts of Latin America are experiencing rapid decline of this species.



REGIONAL BRIEFS

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

Region 1. Technical Review Drafts of recovery plans for the Morro Bay kangaroo rat *(Dipodomys heermanni morroenis)* and the El Segundo blue butterfly *(Euphilotes (=Shijimiaeoides) battoides allyni)* have been sent out for review.

A recovery plan for the Pacific population of the peregrine falcon *(faico peregrinus anatum)* has been sent to Washington for approval.

Region 2. The first three male bonytail chubs *(Gila elegans)* found in 8 years were among eight specimens recently moved to the Willow Beach National Fish Hatchery. This activity will help assure success for the propagation program at Willow Beach.

The Clear Creek Gambusia *(Gambusia heterochir)* Recovery Plan has been submitted for approval.

The following recovery plans have been submitted for agency review: Socorro isopod *(Thermosphaeroma thermophilus)*, Sonoran pronghorn *(Antilocapra americana sonoriensis)*, and Comanche Springs pupfish *(Cyprinodon elegans)*.

Recent observations on the Salt and Verde Rivers indicates there are four nests containing eight young bald eagles *(Haliaeetus leucocephalus)* and two nests that are still incubating.

Region 3. The Army Corps of Engineers has agreed not to dredge the east channel of the Mississippi River at Prairie du Chien, Wisconsin. Instead, the Corps will dredge in the west channel and send down divers to remove any Higgin's eye pearly mussels *(Lampsilis higginsi)* present there. Subsequently, the Corps will place the removed individuals in the east channel, at the same depth as where they were found in already established mussel beds. For a detailed background on the Corps' dredging program in this area, and its work with the Higgin's eye pearly mussel, see the September 1978 BULLETIN.

Region 4. The Florida Game and Fresh Water Fish Commission recently captured and placed transmitter collars on two male Florida panthers *(Felis concolor coryi)* as part of a south Florida study to determine the panther's home range and type of habitat utilized. Additional panthers, including some females, must be monitored to provide complete information. Assuming that present techniques and equipment prove satisfactory, and that Federal grant-in-aid funds continue to be available, the project will be expanded in 1982 to include up to 10 animals.

Recovery plans for the eastern cougar *(Felis concolor cougar)* and the eastern indigo snake *(Drymarchon corals couperi)* were sent out for technical review.

Five specimens of the silver rice rat *(Oryzomys argentatus)*, the first ones ever seen alive, were trapped this past winter in the Florida Keys. The specimens were taken by a Service contractor in connection with the status review notice published in the July 14, 1980, *Federal Register*. A male and a female were retained for captive breeding and various studies. Thus far,

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U.S. Fish and Wildlife Regions

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

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three young have been born to the pair. Additional surveys in the Keys are tentatively planned for later this year.

Region 5. A male bald eagle *(Haliaeetus leucocephalus)* hacked in 1977 from the Montezuma National Wildlife Refuge has mated with a wild female in New York State. The pair has established a nesting territory in the same area that this female and her previous mate had used. Before the first mate was shot last winter, the two birds were the last wild nesting pair in the State.

Region 6. The public meeting for *Astragalus montii* (a plant that was proposed as Endangered with Critical Habitat on January 13, 1981) scheduled for March 18, 1981, in Manti, Utah, was canceled. It will be rescheduled at another time.

Region 7. The Service sponsored a symposium and workshop in February, in Anchorage, on birds of prey. Two papers were presented by Robert Ambrose of the Regional Office: *Population Status of Arctic and American Peregrine Falcons in Alaska, 1980,* and *Prey of Peregrine Falcons in Alaska and Habitat Importance According to Prey Preference.* Michael Amaral, also from the Regional Office, presented a paper on *Recommended Restrictions for Protection of Pregrine Falcons in Alaska.*

CITES MEETING

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Administrative Changes

Eleven separate actions were taken which will assist with day-to-day administration associated with the proper implementation of the Convention.

* A uniform import/export and re-export permit form was adopted. This permit will provide uniform information, which will facilitate enforcement at ports of entry, while providing standardized information for reporting.
* Standard permit requirements have also been developed for use in trade with nonparty countries. This equivalent documentation will assure that the CITES requirements are met by nonparty countries, while facilitating trade with these countries.
* Guidelines for the preparation and transport of live animals and plants were adopted, as well as a voluntary reporting system for stressed specimens.
* Security paper for permits and a new CITES security stamp were approved and will be available for use by the Parties in the near future. This will be an important contribution toward the elimination of forgery of CITES permits.
* The Parties extended their commitment to the development of an identification manual for use by port inspectors. Preparation of the manual is underway and the first sections will soon be available for purchase by the Parties.
* A system for standardizing annual reports was approved.
* A permanent Technical Expert Committee was established which will facilitate the handling of enforcement and administrative issues during the 2-year intervals between meetings of the Parties. In addition, a resolution was approved continuing and broadening the mandate for the Standing (or executive) Committee, which will function on behalf of the Parties between the biennial meetings.
* A resolution was approved establishing new standards for the documentation and identification of raw or slightly worked elephant ivory. This new system, when fully implemented, should be a significant step in reducing the illegal trade in elephant ivory.
* A resolution was also approved requiring additional attention and controls on the trade of rhinoceros horn, which continues to endanger these animals.
* A new 10-year review procedure was approved, which recommends that Regional Committees review existing listings with the intention of proposing the removal of those species which do not meet the listing criteria or changing the listing of those species which are on the wrong appendices.
* A resolution was adopted providing for the development of a mechanism by which confiscated Appendix I parts, products, and specimens can be disposed.

Two items, which the Parties did not have time to fully consider, were referred to the Technical Expert Committee:

* Under Article 7 of the CITES, exemptions can be asserted for imports associated with matters such as preconvention specimens, captive bred specimens, and personal or household effects. Information solicited by the Secretariat from the Parties regarding methods of handling these exemptions, show that practices differ widely. The committee will work towards developing a single interpretation for the Article 7 exemptions which could be applied in a uniform manner.
* Several of the 67 nations have taken reservations on certain species, choosing not to be bound by the restrictions in the CITES. The committee has been asked to analyze the extent of the impact which this process is having on proper implementation of the CITES.

Ranching Species

Ranching of Appendix I species was first discussed by the CITES Parties in Costa Rica 2 years ago. At that time, the Parties established a committee to develop standards by which a limited number of Appendix I specimens could be removed from the wild, reared in captivity in a ranching operation, and then, with adequate safeguards, traded in international commerce. However, procedures presented by the committee to the delegates at the New Delhi meeting were found inadequate since they lacked criteria by which ranching proposals should be evaluated.

Subsequently, the Parties adopted a resolution containing evaluation criteria, and further resolved that, if a ranching operation was found not to be detrimental to wild stocks, that population should be downgraded from Appendix I to Appendix II. Parties proposing ranching operations were asked to formulate proposals for presentation at the next meeting of Parties. (Ranching operations are currently being conducted with sea turtles in Cayman Islands and with crocodiles In Papua New Guinea.)

Listing Criteria

A resolution to impose strict standards for listing look-alikes (animals or plants which look like species protected on Appendix I or II) under Article II 2(b) of CITES was jointly proposed by Canada and the U.S. The intent of the proposal was to establish standards, thereby excluding reasons other than similarity of appearance (such as monitoring) as the basis for inclusion of species under Article II 2(b). This resolution, however, was not accepted by the Parties.

Another matter emphasized by the U.S. delegation was the strict application of the listing criteria for other listings on the appendices. The U.S. withdrew 11 of its own proposals and encouraged other countries to withdraw or modify 17 proposals because they did not fully meet the criteria.

Appendices Amendments

About half of the 92 appendices revisions on the New Delhi proposed agenda were adopted. Twenty-six U.S. proposals were adopted by the Parties (see accompanying chart).

The Federal Republic of Germany's proposals to list all stocks of the sperm, sei, and fin whales on Appendix I carried. The U.S. supported an alternate proposal to make the CITES listings consistent with the International Whaling Convention regulations.

U.S. proposals concerning psittacines

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CITES MEETING

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were not discussed. The U.S. opposed the United Kingdom's proposal to include more than 300 species of parrots on Appendix II and instead advocated the listing of 21 species on Appendix II for biological reasons and 13 species for

Final Actions on U.S. proposals

Species	U.S. Proposal	Action
FAUNA:		
Mammals		
Marianas fruit bat	List in Appendix I	Withdrawn
Little Marianas fruit bat	List in Appendix I	Withdrawn
Preuss' red colobus	Transfer from Appendix II to Appendix I of the population of the United Republic of Cameron.	Withdrawn
Black colobus	Transfer from Appendix II to Appendix I	Withdrawn
Yellow-tailed woolly monkey	Transfer from Appendix II to Appendix I	Withdrawn
Diana monkey	Transfer from Appendix II to Appendix I	Adopted
Drill	Transfer from Appendix II to Appendix I	Adopted
Mandrill	Transfer from Appendix II to Appendix I	Adopted
Sei whale	Transfer from Appendix II to Appendix I of all stocks for which the IWC allows no commercial catch as specified in the 1980 schedule.	Rejected
Fin whale	Transfer from Appendix II to Appendix I of all stocks for which the IWC allows no commercial catch as specified in the 1980 schedule.	Rejected
Sperm whale	Transfer from Appendix II to Appendix I of all stocks for which the IWC allows no commercial catch as specified in the 1980 schedule.	Rejected
Birds		
Gyrfalcon	Transfer from Appendix I to Appendix II of the North American population.	Adopted (excluding Greenland population)
Mauritius pink pigeon	Transfer from Appendix III to Appendix I	Withdrawn
Black-billed amazon parrot	List in Appendix II	Not discussed*
Red-necked amazon parrot	List in Appendix I	Adopted
Yellow-shouldered amazon parrot	List in Appendix I	Adopted
Red-tailed amazon parrot	List in Appendix I	Adopted
Yellow-billed amazon parrot	List in Appendix II	Not discussed
Yellow-headed amazon parrot	List in Appendix II the Mexican population	Not discussed
Hispaniolan amazon parrot	List in Appendix II	Not discussed
Red-crowned amazon parrot	List in Appendix II	Not discussed
Hyacinth macaw	List in Appendix II	Not discussed
Great green macaw	Transfer from Appendix III to Appendix II	Not discussed
Blue and yellow macaw	List in Appendix II	Not discussed
Caninde macaw	List in Appendix II	Not discussed
Red and green macaw	List in Appendix II	Not discussed
Scarlet macaw	Transfer from Appendix III to Appendix II	Not discussed
Blue-winged macaw	List in Appendix II	Not discussed
Military macaw	List in Appendix II	Not discussed

* Appendix II listings proposed for parrots were not discussed, because the listing of the Order (United Kingdom's proposal) was approved first (see story).

look-alike purposes. However, most Parties felt their customs agents would be unable to distinguish most of the species and approved the broader listing.

For more information on the New Delhi meeting, see the January 1981 BULLETIN and the April 7, 1981, *Federal Register*.

Species	U.S. Proposal	Action
Red-fronted macaw	List in Appendix II	Not discussed
Golden-capped conure	List in Appendix II	Not discussed
Cuban conure	List in Appendix II	Not discussed
Patagonian conure/burrowing parrot	List in Appendix II (except ssp. *byroni*, already in Appendix II)	Not discussed
Rusty-faced parrot	List in Appendix II	Not discussed
Yellow-eared conure	List in Appendix II	Not discussed
White-necked conure	List in Appendix II	Not discussed
White-eared conure	List in Appendix II the Brazilian population	Not discussed
Maroon-fronted parrot	List in Appendix I	Adopted
Psittaciformes, all remaining ssp.	List in Appendix II, for control purposes only	Withdrawn
Reptiles		
American crocodile, all populations	Transfer from Appendix II (except I for Florida) to Appendix I	Adopted
Central American river turtle	List in Appendix I	Adopted (In Appendix II)
Fiji banded iguana	List in Appendix I	Adopted (as *B. spp.*)
Fiji crested iguana	List in Appendix I	Adopted (within *B. spp.*)
West Indian rock/ground iguanas	Transfer from Appendix II to Appendix I	Adopted
San Esteban Island chuckwalla	List in Appendix I	Adopted
Gray's monitor lizard	Transfer from Appendix II to Appendix I	Withdrawn
FLORA:		
Panax ginseng (roots)	List in Appendix II, for control purposes only	Withdrawn
Ariocarpus agavoides (cactus)	Transfer from Appendix II to Appendix I	Adopted
Ariocarpus scapharostrus (cactus)	Transfer from Appendix II to Appendix I	Adopted
Aztekium ritteri (cactus)	Transfer from Appendix II to Appendix I	Adopted
Echinocereus lindsayi (cactus)	Transfer from Appendix II to Appendix I	Adopted
Obregonia denegrii (cactus)	Transfer from Appendix II to Appendix I	Adopted
Pelecyphora aselliformis (cactus)	Transfer from Appendix II to Appendix I	Adopted
Pelecyphora strobiliformis (cactus)	Transfer from Appendix II to Appendix I	Adopted
Dionaea muscipula (Venus flytrap)	List in Appendix II	Withdrawn
Drosera regia (sundew)	List in Appendix I	Withdrawn
Nepenthes rajah (giant pitcherplant)	List in Appendix I	Adopted
Darlingtonia californica (California pitcherplant)	List in Appendix II	Adopted
Sarracenia alabamensis ssp. *alabamensis* (Alabama canebrake pitcherplant)	List in Appendix I	Adopted
Sarracenia jonesii (pitcherplant)	List in Appendix I	Adopted
Sarracenia oreophila (green pitcherplant)	List in Appendix I	Adopted

A few years after burning, natural revegetation is already underway which will eventually include jack pines suitable for warbler nesting habitat.

HABITAT MANAGEMENT KEY TO KIRTLAND'S WARBLER RECOVERY

It has been almost a year since the Mack Lake fire in the Huron National Forest in Michigan. As the 13th Kirtland's warbler census approaches, let us look at the effects of that fire on last year's census and the factors responsible for the current status of the species.

On May 5, 1980, a prescribed burn planned for 200 acres of Kirtland's warbler (*Dendroica kiçtlandii*) habitat went out of control because of gusting winds, and burned approximately 25,000 acres. One firefighter was killed, and 41 homes were destroyed or damaged. Some 280 acres which had been occupied by about 14 pairs of warblers in 1979 were burned. The fire was contained the next day.

Although this fire received a great deal of notoriety, prescribed burning is a routine habitat management practice. Indeed, prescribed burns have been conducted successfully by the U.S. Forest Service in thousands of cases nationwide. Developed in the 1930's, the forest management technique of prescribed burning is essential to the survival of the Kirtland's warbler.

Warbler Depends on Specialized Habitat

The Kirtland's warbler does not adapt to a variety of environmental conditions. This bird has never been found nesting anywhere except in northern Lower Michigan. Since the nesting grounds were discovered in 1903, 90 percent of all nests found have been in the drainage of the Au Sable River. Typically, the warbler is found only among young jack pines occuring in dense stands of 80 acres or more, growing on Grayling sand. For thousands of years, this type of habitat was created only through wildfires. Fire serves to clear the land for new growth and also pops open the cones of the jack pine, scattering seeds to renew the habitat.

Now, modern management practices such as prescribed burns and plantings are used to create suitable warbler habitat. (It is not known whether the warblers will continue to use land that is burned once and repeatedly clear-cut and replanted without the continued use of fire.)

The Kirtland's warbler only occupies areas where the jack pines are about 8-20 years old. They set their nests in the Grayling sand which is extremely pervious to water. This prevents flooding during summer showers.

The specialized habitat of the Kirtland's warbler has been reduced by forest fire control and by forest management practices that encourage the conversion of jack pine to red pine or hardwoods.

Cowbird Parasitism

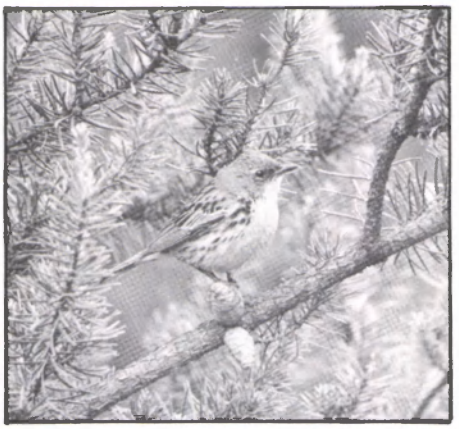
Another threat to the warbler has been parasitism of nests by the brown-headed cowbird (*Molothrus ater*). Cowbirds have been in the warbler's breeding range since the late 1800's but have only posed a serious threat to its reproductive efforts in the past 70 years. According to an examination of warbler nests from 1966-1971, 69 percent had been parasitized.

Beginning in the spring of 1972, a cowbird removal program was initiated with the cooperation of the Fish and Wildlife Service, Michigan Department of Natural Resources (DNR), Michigan Audubon Society, and the U.S. Forest Service. In 1980, a total of 2,961 cowbirds were trapped. This program of systematic control trapping has been an unqualified success in reducing parasitism and increasing the yield of young warblers, according to the Fish and Wildlife Service-appointed Kirtland's Warbler Recovery Team.

1980 Census

According to the results of the 1980 census of the Kirtland's warbler, this fragile species has shown a 15 percent increase over 1979. (The census is the responsibility of the Kirtland's Warbler Recovery Team, which has delegated coordination to the Wildlife Division, DNR.) The census tallied 243 singing males in 1980, (including one male found in Wisconsin and not accompanied by a female), compared to 211 in 1979. Assuming one female is present for the remaining males, the total breeding population would be 242 pairs, or 484 birds. If all of these Kirtland's warblers could be gathered up and placed on a scale, their combined weights would only come to about 15 pounds.

In 1980, the Kirtland's warbler was found in six Michigan counties: Craw-



Michigan Department of Natural Resources

A Kirtland's warbler sitting on a branch of a jack pine tree.

ford (93), Oscoda (58), Ogemaw (46), Kalkaska (38), Roscommon (4), and Iosco (3). Numbers increased in all counties except Oscoda, the site of the Mack Lake fire.

Previously, one warbler was found in Ontario and Quebec in both 1977 and 1978. In Wisconsin, prior to 1980, two males were found in 1978 and one in 1979. None apparently were accompanied by a female. Although the increased population is welcome news, the numbers are still far below those from 1951 (432) and 1961 (502), the first two years of a decennial census.

The Kirtland's warbler is the first songbird to have had its entire population censused. The census has been conducted on an annual basis since 1971, when the count for singing males plummeted to 201. The census occurs from mid-May to mid-June. During this period cooperators spot-check areas that appear to contain habitat suitable for the presence of singing male warblers. The areas that are found to have birds present are censused during a 10-day period in mid-June (June 6 to 15 in 1980). Because some males have been observed to change location during the summer, a short census period is used to avoid duplication.

The census is a cooperative effort of DNR, Forest Service, and Fish and Wildlife Service. Also, members from the local Audubon Society and independent cooperators take part. In all, a record 58 observers participated in the 1980 census.

The census takers attempt to group the warblers into colonies. Singing males are considered to be in the same colony if, and only if, when observed on the census they are no more than 1,034 meters from at least one other singing male. This at least provides a framework for discussing the spatial distribution of singing males.

Wintering Grounds

Very little is known about the Kirtland's warbler outside its nesting range. In migration, the bird enters and leaves the continent at the coast of North and South Carolina. Apparently, the warbler's wintering range is limited to the Bahama Islands. Between October 29 and April 12 it has never been seen anywhere else. In the late 1800's, specimens were taken on nearly all the larger islands in the Bahamas, and there have been many subsequent chance sitings by tourists. With 700 main islands and about 2,400 cays and rocks, studying the Kirtland's warbler's behavior and habitat requirements on the wintering grounds is a difficult task at best.

Recovery

A recovery plan for the Kirtland's warbler was approved by the Fish and Wildlife Service in 1976. The objectives of that plan are to:

1. Maintain and develop suitable nesting habitat throughout its former known range.

2. Protect the warbler on the wintering grounds and along migration routes.

3. Reduce key factors adversely affecting reproduction and survival.

4. Monitor breeding populations to evaluate response to management practices and environmental changes.

5. Consider the introduction of Kirtland's warblers in the Upper Peninsula of Michigan and in other States or Provinces.

One activity which is part of the recovery effort, and has already been mentioned, is the annual census. This is used to evaluate responses to management practices and environmental changes. The 1981 census is planned for June 5-14.

Another objective of the plan, that of maintaining and developing suitable nesting habitat, has been addressed in the Management Plan for Kirtland's Warbler in Michigan. Prepared jointly by the Forest Service and the DNR, this plan divides 127,631 acres of forest land in Michigan into 23 management areas (16 on State forests and 7 on the Huron National Forest).

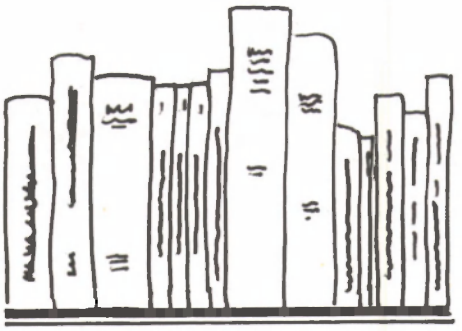
Each management area will be further divided into management units of between 1,000 and 2,000 acres of suitable habitat. These units will again be divided into five cutting blocks of about 200 acres each. Blocks will be cut sequentially at 10-year intervals, allowing for a rotation length of 50 years.

The management plan calls for blocks to be clearcut, followed by a prescribed burn to prepare the site, and then the planting of jack pine seedlings. According to the plan, "research is in progress which should better define the specific impact of burning on nesting habitat and nesting success. Unless it can be demonstrated that productive nesting habitat can consistently be developed without the use of fire, prescribed burning will be the primary tool used in the regeneration process." However, as a result of the Mack Lake fire, the Forest Service cancelled the remaining burns scheduled for 1980 and 1981. There will be no burning again until 1982, after new training requirements and guidelines are developed.

Undoubtedly, the Mack Lake fire will significantly alter the cutting schedule for the Mack Lake management area. However, the Forest Service reports that in some areas soil quality was improved because of the fire. There has been good to excellent regeneration of natural jack pine following the burn, and the Mack Lake area is expected to provide good warbler habitat in the late 1980's.

Michigan Department of Natural Resources

A stand of mature trees burned by natural fire.



New Publications

The Bird Business: A Study of the Commercial Cage Bird Trade (Second Edition—1981) by Greta Nilsson reports that world trade in wild birds has recently amounted to a minimum of 7.5 million annually. Reasons for the increase in trade and its damaging side effects are documented in this study sponsored by the Animal Welfare Institute. Copies may be ordered for $5.00 from either the Animal Welfare Institute, P.O. Box 3650, Washington, D.C. 20007, or the Humane Society of the United States, 2100 L Street, N.W., Washington, D.C. 20036.

An Annotated Bibliography of the Desert Tortoise, ***Gopherus agassizi,*** Desert Tortoise Council Special Publication No. 1, 1980, is now available. To order, send $8.00 (plus $1.00 postage) to the Desert Tortoise Council, 5319 Cerritos Drive, Long Beach, California 90805.

Threatened and Endangered Plants of Nevada: An Illustrated Manual, has been published jointly by the Fish and Wildlife Service and the Bureau of Land Management. Free copies are available from the Service's Portland Regional Office or the Bureau of Land Management, Nevada State Office, 300 Booth Street, Reno, Nevada 89509.

BOX SCORE OF SPECIES LISTINGS

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

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

Number of species currently proposed: 11 animals
9 plants
Number of Critical Habitats listed: 48
Number of Recovery Teams appointed: 68
Number of Recovery Plans approved: 41
Number of Cooperative Agreements signed with States:
38 fish & wildlife
10 plants

March 31, 1981

BOX SCORE REVISIONS

As you may have noticed, the Box Score has been slightly revised. Instead of two explanatory columns (U.S. and foreign) under both the Endangered and Threatened classifications, there are now three. Column one under each classification includes species found only in the U.S.; column two, those found both in the U.S. and in foreign countries; and column three, those found only in foreign countries. Therefore, species are counted only once and appear only in one column. Totals can be computed by adding across or down the chart.

As noted in the Box Score itself, the separate Endangered and Threatened populations of five listed species are counted as separate species. This manner of accounting for species populations agrees with the term "species" as defined by the 1973 Act: ". . . any subspecies of fish or wildlife or plants and any distinct population segment of any species of vertebrate or wildlife which interbreeds when mature."

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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