

ENDANGERED SPECIES

Technical Bulletin

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

U.S. Bans Ivory Imports for Protection of the African Elephant

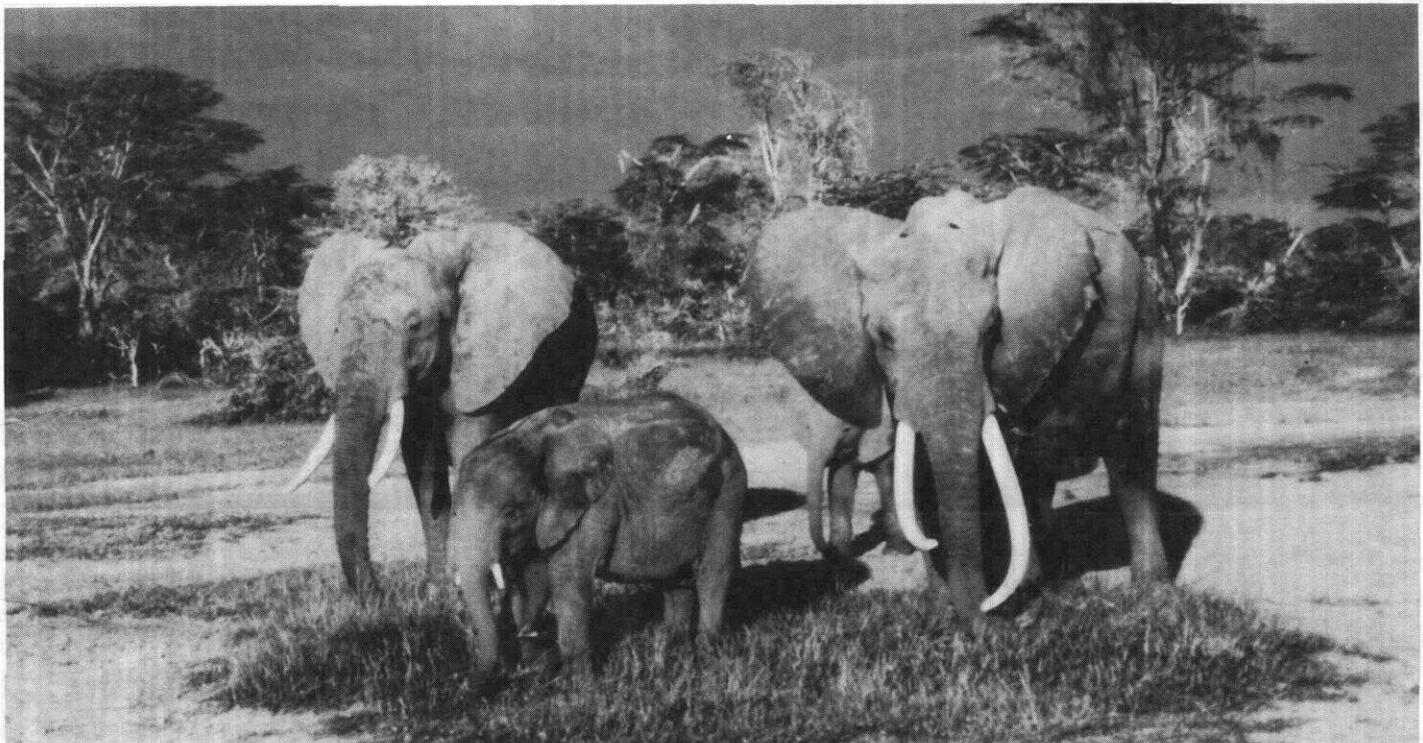


photo by Mmm. Westervelt

Dr. Iain Douglas-Hamilton, widely regarded as one of the world's leading authorities on the African elephant, has called the decline of this species "...one of the greatest mammalian tragedies of this century."

Following a decision announced by President Bush in his World Environment Day message on June 5, an immediate moratorium on the importation of African elephant (*Loxodonta africana*) ivory into the United States was implemented by the U.S. Fish and Wildlife Service through an announcement in the June 9, 1989, *Federal Register*. The ban applies to imports of raw and worked ivory from all countries, and is aimed at individual souvenirs purchased abroad by tourists as well as large commercial imports. It will remain in effect at least until adequate sustainable harvest levels are determined and enforceable international ivory trade controls are established.

This action was taken in an effort to slow the dramatic decline of the African elephant, which is already listed by the United States as a Threatened species.

Estimates of African elephant numbers today range from 550,000 to 700,000, down from 1.5 million just a decade ago. Well-armed poachers are believed to kill 200 to 300 elephants every day for their tusks.

A quota system for legal, regulated trade in ivory was authorized a number of years ago under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), a treaty to regulate international wildlife trade that has been signed by 102 countries. Unfortunately, however, 80 percent or more of the world's ivory trade is believed to occur illegally, outside of the CITES quota system. With elephant poaching and the ivory trade essentially out of control, there is growing concern about whether or not wild populations of this magnificent species — the largest land animal in the

world — will survive into the next century.

On May 12, 1989, the U.S. submitted a formal proposal to move the African elephant from Appendix II of CITES to the more restrictive Appendix I at the next general CITES meeting in October 1989. This would effectively end legal commercial ivory trade among all CITES nations. Because of developing concern that poaching and illegal trade would increase in the time before stronger CITES controls are imposed, the Service decided that an immediate moratorium on imports of ivory into the U.S. was appropriate. The ban was imposed under provisions of the African Elephant Conservation Act of 1988.

By authority of the Act, the Service had already banned importation of ivory from all countries that are not parties to CITES and from Somalia, which is believed to be

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Regional News

Regional endangered species staffers have reported the following news:

Region 2 — A 6-year-old female whooping crane (*Grus americana*) was shipped May 5 from the Patuxent Wildlife Research Center in Laurel, Maryland, to

Grays Lake National Wildlife Refuge in Idaho. This bird had been hand-reared, was full-winged, and was of breeding age (but had not paired previously). She was placed in an enclosure within the territory of a wild, foster-reared male whooping

crane. The male had previously shown strong parental tendencies by helping a single sandhill crane (*Grus canadensis*) foster parent feed a whooping crane chick through the summer of 1988. The male exhibited interest in the penned female whooping crane. After one week, the female was allowed to leave the enclosure. Dr. Rod Drewien reports that since that time the two whooping cranes have copulated and built a nest. The male enlarged his defended territory and the female assists him in territorial defense.

This is the first evidence of mating in the 15 years of the Grays Lake cross-fostering experiment. One of the theories explaining the absence of breeding until recently is that the cross-species foster-rearing may create improper sexual imprinting. The cross-fostered whooping crane males appear to behave similarly to wild whooping crane males in the Canadian population. The female cross-fostered whooping cranes, however, do not seem to exhibit appropriate behavior. A similar phenomenon has been observed with some raptor species, in which 50 percent of the individuals that are cross-fostered become improperly sexually imprinted on the foster parent species.

Biologists from the Fish and Wildlife Service's Albuquerque, New Mexico, Field Office, Alchey National Fish Hatchery, and Mescalero National Fish Hatchery, along with biologists from the U.S. Forest Service, collected 100 Gila trout (*Oncorhynchus gilae*) from South Diamond Creek in the Gila Wilderness of New Mexico. The fish were packed out of the wilderness by mule and then taken to the Mescalero hatchery by truck. The ripe females were hand-spawned at the hatchery and approximately 5,000 eggs were taken. The offspring of these native Endangered fish will be reintroduced in the wilderness streams that have been cleared of non-native trout.

The Gila Trout/Chihuahua Chub Recovery Team conducted habitat evaluation surveys of several streams and stock tanks (ponds) in the Mimbres River drainage of southern New Mexico. The surveys were conducted in an attempt to locate suitable reintroduction sites for the Chihuahua chub (*Gila nigrescens*). Streams surveyed for this Threatened fish included Gallinas Creek in Noonday and Allie Canyons. Two chubs were taken upstream of San Lorenzo along a reach of river owned by the New Mexico Department of Game and Fish. The Mimbres River downstream of San Lorenzo also was intensively sampled, but no Chihuahua chubs were found.

A new population of the Endangered Todsens pennyroyal (*Hedeoma todsenii*) has been discovered by Bureau of Land Management biologists in the Sacramento Mountains of New Mexico. This Endan-

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Endangered Species and Florida's Pesticide Program

Linda Walker
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In a far-reaching attempt to protect endangered plant and animal species, the U.S. Fish and Wildlife Service (Service) is working with the Environmental Protection Agency (EPA) to propose needed changes in the regulation of pesticide use. These changes would result in the better management of pesticide use in areas or at times where they may harm endangered species. The regions most likely to see these changes are those with high numbers of aquatic endangered species and large areas of agricultural production, such as the Tennessee-Cumberland Valley and other parts of the southeast, particularly Florida.

As discussed in BULLETIN Vol. XIV, Nos. 1-2, the EPA has developed a national Endangered Species Protection Program to evaluate and, where necessary, control the impact of pesticides on endangered species. Better managing the use of pesticides found harmful to endangered species would be accomplished by distributing map bulletins as part of a pesticide label. These bulletins provide information on the distribution and habitat of the affected endangered species, and require the user to follow the instructions on how, where, and when to apply the chemicals.

Agricultural pesticides are widely considered an economic necessity in Florida, one of the largest producers of winter fruit and vegetables in the United States. Most American consumers have come to demand fruit and vegetables that are uniformly blemish-free and vibrant in color. In order to produce these conditions in large

quantities, farmers apply chemicals from planting to harvest. Until consumers begin to accept fruit and vegetables in a more natural condition, the American farmer will feel pressured to use pesticides to compete effectively in the marketplace.

Florida's rapidly expanding population causes agriculture and wildlife to compete for a shrinking amount of available land. Much wildlife habitat is being destroyed, and what remains is often degraded by pesticide and nutrient-laden runoff. Endangered and threatened species are particularly vulnerable to such pollution. Acute impacts of pesticides on wildlife include die-offs and poisonings. Chronic impacts are not immediately noticeable but the consequences are often as significant, such as past episodes of DDT poisoning and eggshell thinning in raptors. In addition to direct impacts, pesticides can affect wildlife in other ways; secondary poisoning resulting from ingesting contaminated food, reductions in food sources, or elimination of habitat (such as aquatic herbicides destroying the nesting substrate of the endangered Everglade snail kite, *Rostrhamus sociabilis plumbeus*, in Florida).

Since most endangered plants and animals do not exist in direct association with agriculture, the potential for conflict usually occurs when pesticides contaminate a downstream water supply or the species inadvertently comes into contact with a poisoned animal. The species affected most by chemicals often are those whose ranges potentially overlap agricultural areas, such as the Everglade snail kite,

the San Joaquin kit fox (*Vulpes macrotis mutica*) in California, and the northern aplomado falcon (*Falco femoralis septentrionalis*) in the southwest. In these cases, effects on endangered species from pesticide use need to be addressed only in the area of overlap.

In 1987, the EPA granted several States permission to develop their own endangered species/pesticide programs. With such individual programs, States can better tailor pesticide regulations to reflect their own unique needs. A State program offering equal or greater protection will supersede the Federal program when approved by both the Service and the EPA.

Florida is one of the States taking a lead in this regard. In 1987, Governor Martinez requested the Florida Department of Agriculture and Consumer Services to set up a task force for developing and implementing its own endangered species/pesticide program. The task force is comprised of more than 60 members and reflects all interested parties, including Federal, State, and local governments, agricultural commodities representatives, and environmental organizations. Florida's State plan resembles the national program in that it intends to use map bulletins to identify restricted use areas; however, it is including several unique features.

For species with highly restricted ranges, such as some endemic plants, the State proposes a landowner contact program. This involves negotiating agreements with landowners who have endangered species on or adjacent to their property. These agreements give protection to the species by better managing certain types of pesticide use and by establishing monitoring programs. In such cases, developing agreements with individual landowners instead of establishing statewide restrictions keeps the disclosure of endangered species sites to a minimum, thereby preventing potential vandalism and/or illegal collecting.

Another unique aspect of Florida's plan is the development of prototype "species plans." In these plans, basic information about the species' biology is used to develop a program of education, monitoring, and pesticide use. Florida intends to deal with each species separately. The first prototype plan developed was for the snail kite.

Snail kites have a water-dependent breeding cycle. In non-drought years, this bird nests in water conservation areas in the southern part of the State. In drought years, however, these conservation areas become too dry and the birds are forced



Everglade snail kite feeding her chick at a nest on Loxahatchee National Wildlife Refuge. The first of Florida's "species plans" under its endangered species/pesticide program was written to protect this rare bird.

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PROPOSED LISTINGS — MAY 1989

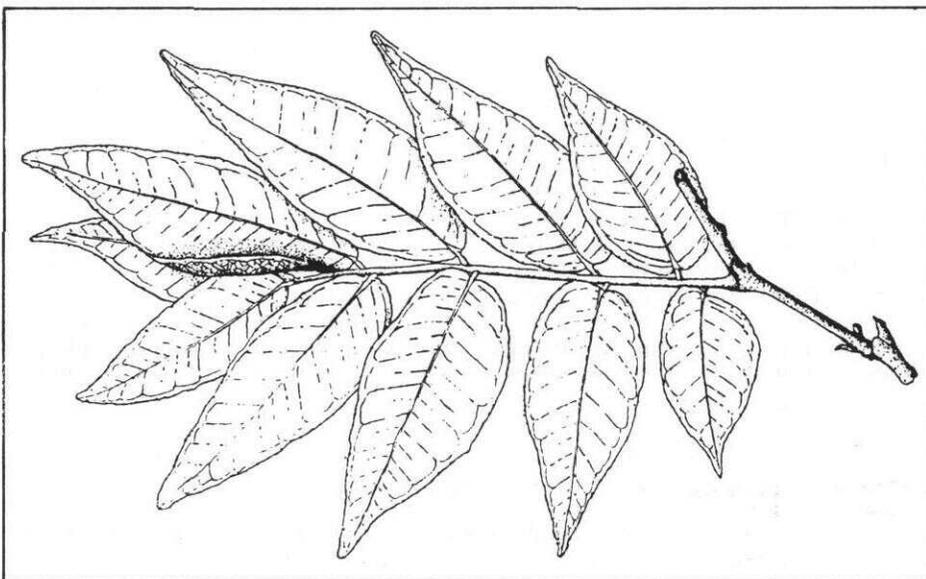
Four species—a fish and three plants—were proposed by the Fish and Wildlife Service during May 1989 for addition to the U.S. List of Endangered and Threatened Wildlife and Plants. If these listings are approved, Endangered Species Act protection will become available to the following:

Neosho Madtom (*Noturus placidus*)

Known only from the Neosho (Grand) River drainage, this small midwestern fish currently exists in three populations. One is found in the Cottonwood and Neosho Rivers above the John Redmond Reservoir in Kansas; another occurs in the Neosho River below the reservoir in Kansas; and the third occurs in the Spring River in Missouri and Kansas. The Neosho madtom seems to require riffle areas within clean, relatively shallow rivers with a substratum of loosely packed gravel pebbles less than 1 inch (2.5 centimeters) in diameter.

When the lower Neosho River in Oklahoma was converted to a series of reservoirs, up to a third of the madtom's habitat was eliminated. The Soil Conservation Service (U.S. Department of Agriculture) has proposed to construct as many as 11 small dams within the South Fork watershed of the Cottonwood River. Further, the U.S. Army Corps of Engineers is investigating the possibility of constructing up to 112 small dams within the Cottonwood and upper Neosho River watersheds and reallocating storage in existing Federal reservoirs in the Neosho River basin. All of these proposed projects have the potential to alter and/or reduce flows within the madtom's habitat.

Water quality is another concern. In the past, some parts of the Neosho madtom's habitat were degraded by sewage, industrial effluents, and run-off from livestock



U.S. Forest Service drawing

Stahlia monosperma is an evergreen tree with alternate, pinnately compound leaves composed of 6 to 12 opposite leaflets.

feed lots. The Spring River flows through areas that have been mined extensively for lead, zinc, and coal, and the Neosho River flows through numerous oil fields. There is believed to be some potential for future water pollution from any of these sources unless adequate controls can be developed.

The Neosho madtom already is listed by Kansas, Oklahoma, and Missouri under State laws as endangered or threatened. This existing protection would be supplemented and reinforced by the Endangered Species Act if the Service's May 19, 1989, proposal to list the Neosho madtom as Threatened is approved.

Cóbana Negra (*Stahlia monosperma*)

Stahlia monosperma, an evergreen tree that can reach up to 50 feet (15 meters) in

height, is endemic to a few sites in Puerto Rico, the nearby island of Vieques, and the Dominican Republic. This member of the pea family (Fabaceae) is the sole species in its genus. It grows only in brackish, seasonally flooded coastal wetlands in association with mangrove communities.

The most significant threat facing *S. monosperma* is habitat destruction. A 1987 survey found that the largest known natural population, located near Boquerón on the southeastern coast of Puerto Rico, numbered only 23 mature trees and 35 seedlings. Construction of residential and tourist development complexes, which would encourage the dredging and filling of coastal wetlands, has been proposed for this region.

Another threat is woodcutting; *S. monosperma* is highly valued for fenceposts and is suited for use in furniture. Seed-

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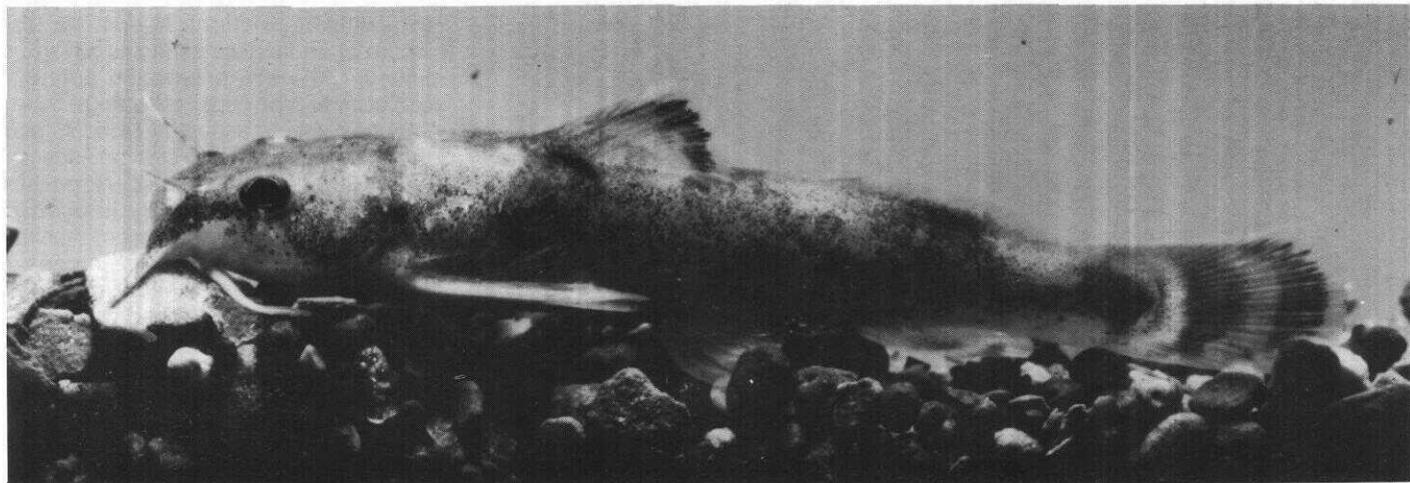


photo by Joseph T. Collins

The Neosho madtom resembles a small catfish. It reaches a total length of less than 3 inches (7.5 centimeters) and can be distinguished from related species by its mottled markings.

Listing Proposals

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lings are vulnerable to trampling or browsing by cattle. Although the status of the Hispaniola (Dominican Republic) population is not as well known, it is presumed to be vulnerable to the same threats. The population on Vieques, consisting of 30 to 40 individuals of various ages, occurs on property of the U.S. Navy.

Because plantings of *S. monosperma* have been successful and the Puerto Rico Department of Natural Resources is making efforts to propagate the species, it was proposed as Threatened rather than Endangered (F.R. 5/12/89).

Price's Potato-bean (*Apios priceana*)

Another member of the pea family, Price's potato-bean is a twining perennial vine that grows to about 5.5 yards (5 m) in length. It has pinnately compound leaves and bears compact inflorescences of greenish-white to purplish-pink flowers. This plant grows from large single tubers that are edible and historically may have been consumed by Indians or pioneers, as was the related *Apios americana* (which has small multiple tubers). *Apios priceana* thus has potential economic significance as a food crop. Moreover, its ability to grow in highly alkaline soils could provide genetic resources for developing *Apios* hybrids with large multiple tubers that can be cultivated in lands that are marginal for most other crops.

Price's potato-bean currently is known to occur in Alabama, Mississippi, Kentucky, and Tennessee. Of the 21 populations reported historically, 13 could be found in recent surveys. One of the apparently extirpated populations was on a national forest in southern Illinois. Only 5 of the 13 known surviving populations contain 50 or more plants. The Service has proposed to list this species as Threatened (F.R. 5/12/89).

Many of the remaining populations are declining because of habitat modification. Price's potato-bean is associated with forests but it does not grow well in deep shade. Instead, it occurs in clearings, open woods, and forest edges. Some populations extend onto adjacent roadside or powerline rights-of-way. Vegetation succession leading to excessive shading is one threat to the species. Price's potato-bean probably benefits from selective logging of its habitat, which opens the forest canopy, but heavy logging or clear cutting apparently has eliminated at least one population and threatens others. Two populations that occur within pastures have been damaged heavily through trampling and



Price's potato-bean bears compact clusters of flowers that develop into legumes up to about 8 inches (20 cm) in length. Although the beans themselves are not edible to humans, the large tubers may have been a food source for Indians and pioneers.

soil compaction by cattle. Additionally, habitat on rights-of-way could be degraded by road widening or herbicide applications unless the presence of the species is taken into account.

One population in Tennessee grows on property owned by The Nature Conservancy. Part of the second population in the same State occurs within a conservation area on Tennessee Valley Authority land, but the portion that extends onto a roadside right-of-way is not protected. A third site is on Army Corps of Engineers' property in Alabama. If Price's potato-bean is listed, the Corps will be responsible for avoiding jeopardy to the species. All other populations are on private lands and State rights-of-way.

Bartram's Ixia (*Salpingostylis coelestina*)

A perennial herb in the iris family (Iridaceae), Bartram's ixia produces narrow, grassy leaves about 1 foot (30 cm) in

height and bears one or two violet flowers that fade to violet-lavender before they wilt. This species occurs only in six counties of northeastern Florida. Within this region, Bartram's ixia is restricted to moist, relatively open pine flatwoods with a low-growing understory of grasses, herbs, and shrubs. It often grows with pitcher plants, sundews, orchids, and other plants of wet areas.

The low understory vegetation associated with Bartram's ixia is maintained by periodic fires, and this species, which grows from a well-buried bulb, apparently depends on burning to stimulate flower production. In the past 30 years, most of the natural pine flatwoods in northeastern Florida have been converted to pine plantations for pulpwood, and fire has been suppressed. When these densely planted stands mature, there is little understory vegetation.

The open pine flatwood habitat required by Bartram's ixia is vulnerable to several other threats. Some former sites have been converted to pastures, where the

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Ivory Ban

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violating the Act. Up until the recent import ban, the United States imported 10 to 12 percent of Africa's annual ivory exports for piano keys, jewelry, scrim-

shaw, and other trinkets. About 65 percent of U.S. imports came from Hong Kong, which is the major world ivory dealer and carver. Both the U.S. and Hong Kong are parties to CITES. Japan, another CITES member, is the world's leading consumer of ivory. If the African elephant is moved to CITES Appendix I, legal trade will come to a halt; however, if

a CITES member files a reservation, it could then legally ignore the ban. The U.S. has a policy of avoiding such reservations, and it is encouraging all CITES signatories to comply with the will of the two-thirds majority of member nations that is required to make or change a CITES listing.

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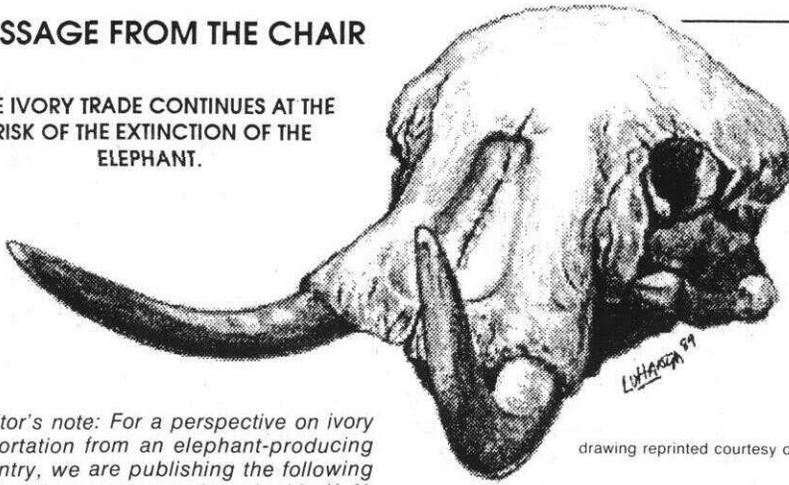


photo by Bill Stewart, courtesy of Animal Welfare Institute

These elephant products are among the illegally imported items that have been confiscated by the Fish and Wildlife Service. An estimated 200 to 300 African elephants are killed every day, most of them by poachers, to satisfy the world demand for ivory trinkets and other products.

MESSAGE FROM THE CHAIR

THE IVORY TRADE CONTINUES AT THE RISK OF THE EXTINCTION OF THE ELEPHANT.



drawing reprinted courtesy of MIOMBO

(Editor's note: For a perspective on ivory importation from an elephant-producing country, we are publishing the following excerpt from a recent column by Mr. N. N. Kitomari, Deputy Governor General of the National Bank of Tanzania. Mr. Kitomari writes as Chairman of the Steering Committee for the Wildlife Conservation Society of Tanzania. The full column was published in MIOMBO, the Society's quarterly newsletter.)

Recent studies have established that ivory poaching has reduced the elephant populations in East Africa by half in less than a decade. The same story is repeated for the rest of Africa except parts of southern Africa where rigorous management has actually made it possible for the elephant numbers to increase. Over much of the east and central Africa, elephants are so heavily poached, even in previously secure sanctuaries such as Selous, Tsavo, and the Luangwa Valley, that it will not be long before the elephant is extremely rare or even extinct. There is little doubt that short-term profit-motivated poaching is responsible for the enormous decimation of the large herds of elephants. Conservation organizations of the world are now demanding immediate enlightened action, strong political will, and a high degree of international cooperation to avert a disaster.

Africa alone cannot find a solution to this crisis. International cooperation is

needed now to combat both the poaching and the international demand for ivory because the two go hand in hand. Without the demand for ivory, there would be no poaching! While we would praise the efforts of CITES, none of the methods proposed would come anywhere near stopping illegal trafficking in ivory when the market is so large and insatiable. The only way countries can help to protect elephants is to close down the enormous international market that creates such a huge demand for ivory.

African governments have been responsible enough to set aside sufficient protected areas to afford the African elephant a home even against competing land-use demands, they spend an inordinately large amount per capita on elephant protection, and many are party to CITES. They have participated in efforts to establish and implement such controls as the Ivory Export Quota, which was adopted in 1985 and has been in force since 1986. This is all well and good with regard to legitimate ivory; what of illicit trafficking?

Over the short space of 3 years that the ivory export quota has been in operation, 7,641 pieces of ivory weighing some 35 tons have been inter-

do not originate directly from an ivory-producing country under the auspices of the CITES ivory quota system. This is an interim measure that became effective June 19 and is intended to remain in effect at least until the October 1989 CITES conference.

The U.S. ivory moratorium does not prohibit sport hunters from importing trophies of African elephants legally taken in the country of origin, provided that the country has a CITES ivory export quota and has issued the appropriate export permits. Legal sport hunting has not been a significant factor in the elephant's decline. The license fees and other expenses associated with legal sport hunting are believed to contribute to wildlife management programs and give African

cepted on the way to the illegal market from Tanzania alone! If we accept the premise that this represents no more than 20 percent of ivory smuggled out of the country each year, that means 38,206 pieces (176 tons) representing some 10,000 elephants. Is it any wonder therefore that the elephant is seriously threatened?

The elephant is more important on account of its role in shaping habitats and maintaining biological diversity. Elephants need a far larger range than many other species and they occur across most habitats in Africa from desert through savanna and wooded grassland to forest. We recognize too that the elephant appeals to the emotions and sympathy of people of all ages and has an enormous value and an economic role to play in the tourist industry.

Consider this for a moment: the United States, Western Europe, and Japan consume close to two-thirds of the world's "worked ivory" between them. If they were concerned enough as parties to CITES to agree to the appeal and prohibit importation of all ivory without exception, the present enormous demand for ivory would cease: in turn, poached ivory would not find a market, or at any rate not at current prices. Ivory poaching would become less lucrative. And CITES, the one instrument of international standing available, can do it. CITES parties should impose a worldwide ban on the ivory trade to stop the convention being used to channel hundreds of tons of illegal ivory into legal trade.

MIOMBO is distributed quarterly to members of the Wildlife Conservation Society of Tanzania. Persons interested in becoming members are invited to write the Society at P.O. Box 70919, Dar es Salaam, Tanzania. For overseas membership, enclose a check made out to the Society for \$10 (U.S.).

Ivory Ban

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Due to the failure of international efforts to manage a legal trade in African elephant ivory through the CITES quota system, at least seven African nations also have called for a halt in all international ivory trade. Four of these nations — Tanzania, Kenya, Gambia, and Somalia — have submitted their own proposals to move the African elephant from CITES Appendix II to Appendix I.

On June 15, 1989, the government of Japan announced a ban on the importation of worked and "semi-worked" ivory and a ban on all raw ivory shipments that

countries an additional economic incentive to maintain hunttable herds.

A separate petition to reclassify the African elephant under the Endangered Species Act from its current classification as Threatened to the more critical category of Endangered was sent to the Service on behalf of 36 wildlife protection organizations on February 16, 1989. The petition contained supporting information that the status of the elephant has deteriorated substantially since it was listed as Threatened and that current ivory trade controls are not arresting the decline. After review of the petition, the Service published a finding that the reclassification may be warranted (F.R. 5/9/89). A full status

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Regional News

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gered plant formerly was known from only one small population on the White Sands Missile Range. Todsen's pennyroyal plants are being propagated at The Arboretum at Flagstaff and at the University of New Mexico for basic biological study and possible planting in native habitat. The discovery of a second natural population greatly enhances prospects for recovery of this species.

The Mount Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*) population has continued to decline due to the failure of the squirrel's primary food crop (spruce and fir seeds) in 1988. The population in April was estimated to range from 148 ± 59 to 99 ± 53 , down from the October 1988 estimates of 226 ± 62 to 178 ± 62 . Surveys will be conducted to verify the April estimates and check other areas. The U.S. Forest Service, Arizona Game and Fish Department, and Fish and Wildlife Service will closely monitor the 1989 spruce and fir cone crops in the Pinaleno Mountains.

The Service is cooperating with the U.S. Army to protect the Sanborn's long-nosed bat (*Leptonycteris sanborni*) and its habitat on Fort Huachuca, Arizona. Cursory surveys in April 1989 documented the recent presence of this Endangered bat on the base with the recovery of a mummified specimen from a mine cave used by recreationists. Portions of Fort Huachuca have dense stands of *Agave palmeri*, a prime food source for this bat. Management of controlled burns, tank training exercises, firing range activities, and recreational access to the caves and mines on the base will be needed to preserve the bat's habitat.

The Tulsa, Oklahoma, Ecological Services Field Office has begun the third year of a program to improve public awareness and appreciation of the interior least tern (*Sterna antillarum*), an Endangered bird. An estimated 700-800 least terns nest at scattered beach habitats throughout Oklahoma. Publicity has focused on tern colonies on the Arkansas River in the Tulsa metropolitan area, which account for almost one-third of the 200 breeding adults on the river in Oklahoma. "Area Closed" signs, interpretive signs, occasional tern tours, volunteer monitoring of colonies, and media coverage form the core of the program. Television, newspaper, and radio coverage has increased over the years, with positive public response. Increasing emphasis will be placed on reaching people in rural areas where the majority of terns nest.

A pamphlet on the tern has been developed jointly by the Service and the

Oklahoma Department of Wildlife Conservation. Ten thousand copies will be mailed soon to Service offices and State conservation agencies throughout the tern's range for distribution to the public.

Region 4 — North Carolina Wildlife Resources Commission biologists, with funding by an Endangered Species Act-Section 6 grant, recently found four juvenile Tar River spiny mussels (*Elliptio (Canthyria) steinstansana*) in a tributary of the Tar River in North Carolina. These specimens were collected at one shoal and they represent the greatest concentration of this Endangered species observed in recent years. The Service's Raleigh Field Office, in conjunction with the Commission, is working with the Farmers Home Administration to protect part of the riparian habitat along this tributary through provisions of the Food Security Act of 1985 ("Farm Bill"). This tributary is the only known current habitat of the species, and riparian zone protection is critical to its survival.

The Service has acquired approximately 124 acres (50 hectares) at Logan Cave in Benton County, Arkansas, to protect the second largest gray bat (*Myotis grisescens*) maternity colony in Arkansas and the second largest population of Ozark cavefish (*Amblyopsis rosae*) anywhere. Many other rare but little known animals will benefit from this acquisition, including a recently described troglobitic crayfish (*Cambarus aculabrum*). This crayfish is known from Logan Cave and only one other site. The property will be managed as a satellite unit of Hollow Bend National Wildlife Refuge.

The Service's Jackson, Alabama, Field Office has been working with the U.S. Forest Service to conserve the pondberry (*Lindera melissifolia*), an Endangered plant found within the Delta National Forest in Mississippi. The Forest Service has taken an active role in the conservation of this species, which is particularly significant since the Forest is believed to support the species' largest known population. To date, the Forest Service has located 12 colonies. Disjunct populations of this species occur at two other sites in Mississippi and in Arkansas, Georgia, North Carolina, and South Carolina. The Forest Service is protecting all sites within Delta National Forest and is continuing with surveys for additional sites. Eventually, a monitoring program will be established for selected sites in the Forest to gain a better understanding of this species' biology and habitat requirements.

Region 5 — The piping plover (*Charadrius melodus*) is the target of increasing attention in Region 5. The Atlantic coast population of this beach-nesting bird is listed as Threatened. Among the recovery efforts under way are increased

public education and protection during the nesting season. A 5-minute videotape on the plover's life history and the threats to its survival can be obtained from the Region 5 Public Affairs Office.

Packets of information about the piping plover have been sent to about 250 property owners on a barrier island off the Virginia coast that is experiencing increasing development. These packets include guidelines on measures that landowners can take to protect plovers on their property. State and Federal law enforcement agents will increase their efforts on this island during periods of high public use, such as Memorial Day and the Fourth of July, when plovers are subject to greater disturbance.

Region 5 is preparing a proposal to designate Critical Habitat for the Atlantic coast population of the piping plover. In other news relating to the plover and Section 7 of the Endangered Species Act, a consultation with the Army Corps of Engineers regarding an application for a construction permit has been completed. The applicant is seeking a permit to build a community pier facility on Cedar Island, Virginia. This barrier island is relatively undeveloped and is accessible only by boat. The community pier would facilitate access to the island, thereby promoting vehicular traffic, construction of more summer homes, and other human impacts. In its Biological Opinion, the Service found that the pier and associated human impacts would likely jeopardize the plover by adversely modifying nesting habitat and reducing plover survival. In cooperation with the applicant, the Service came up with "reasonable and prudent alternatives" that should avoid jeopardizing the plover. One such measure is for the developer to operate a private taxi service to reduce demand for unrestricted use of private vehicles on the island. Others include plover monitoring

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Ivory Ban

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review is under way. The public has 90 days to provide information or comments (address them to the Office of Scientific Authority, ARLSQ Room 725, U.S. Fish and Wildlife Service, Washington, D. C. 20240), after which the Service will decide whether or not to formally propose a reclassification. If the African elephant is ultimately moved to the category of Endangered, the ban on ivory imports would become permanent and would be extended to include trophies taken in legal sports hunts. Interstate trade without a permit also would be prohibited.

Although a moratorium on imports by the U.S. alone will not stop the world ivory trade, the Service hopes that its leadership will influence other countries to take similar protective actions.

Regional News

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and nest posting surveys throughout the nesting season and plover protection measures by the landowners who use the pier facility.

Region 6 — The gray wolf (*Canis lupus*) recovery effort in the northern Rocky Mountains is under way with the addition of three Service biologists to the Fish and Wildlife Enhancement Office in Helena, Montana. Dr. Steve Fritts is the Wolf Management Coordinator for the Montana, Greater Yellowstone Ecosystem, and Central Idaho Recovery Areas. Dr. Fritts transferred from the Patuxent Wildlife Research Center in Maryland, from where he supervised the Minnesota wolf recovery effort and other endangered species programs. Mr. Ed Bangs, the project leader directing wolf recovery in Montana, transferred from Kenai National Wildlife Refuge in Alaska, where he worked as a wildlife biologist managing ungulates and predators. Mr. Joe Fontaine, a wildlife biologist who recently transferred from the Bureau of Reclamation in Bismarck, North Dakota, is also working on wolf management in Montana.

The initial strategy for wolf recovery in Montana will be to establish a three-phase wolf monitoring system. The initial phase will be the collection and confirmation of wolf sightings using an organized system of observers from State and Federal agencies and local Indian tribes. The second phase will be to survey an area from which a high number of sightings have been reported to determine if a pack does exist. If a pack is located, the third phase will be to trap and radio-collar several individuals of the pack to document pack establishment. Kits are being developed by the Fish and Wildlife Service, in cooperation with the National Park Service and U.S. Forest Service, to guide in obtaining competent sightings. The kits also will be used as an educational tool for schools and conservation organizations.

In March, a female gray wolf was killed illegally north of the town of Yaak in northwestern Montana. It is believed that the female wolf dispersed from the "Camas" pack near Glacier National Park. The Camas pack consisted of members of the original "Magic" pack, which in 1983 became the first pack known in recent years to be active in northwestern Montana. The female had been in the area north of Yaak since October 1988 and may have been waiting for a mate to establish a territory. The loss of this wolf has slowed recovery efforts by reducing reproductive potential and possible establishment of a new pack. State and Federal

law enforcement officials are working together to solve the case.

In April, a male wolf was killed illegally by a sheep rancher about 30 miles (48 kilometers) west of Kalispell. Apparently, the rancher thought it was a coyote when he shot the animal. He subsequently turned himself in, and the case is now under investigation by the Service.

Region 8 (Research)— According to a January 1989 survey by biologists from the Patuxent Wildlife Research Center's Hawaii field station, approximately 3,500 palilas (*Loxioides bailleui*), an Endangered bird, survive on the upper slopes of Mauna Kea. This is a decrease of almost 20 percent from the 1988 estimate of 4,300. Five active palila nests had been found through mid-May.

The National Ecology Research Center has begun a study to determine the role of food availability in the population biology of piping plovers nesting along the Platte River in central Nebraska. The Service will use the results of the study to determine management options for the bird.

As of June 7, there were 34 adult Puerto Rican parrots (*Amazona vittata*) in the wild and 9 chicks (5 of which had fledged). The Luquillo aviary has a total of 52 parrots, including 46 adults and 6 chicks.

Region 9 (Washington, D.C. Office)—After reviewing comments from the Environmental Protection Agency (EPA) and the Department of Agriculture, the Service has issued a final Biological Opinion on the potential impacts to 165 listed species from the registration of 112 pesticides. (For background on this subject, see BULLETIN Vol. XIV, Nos. 1-2.) The Biological Opinion was prepared by a task force of Service field, Regional, and Washington Office specialists. It presents information on a chemical as well as species basis, and it includes improvements on the handling of incidental take, reason-

able and prudent measures, and consistency in the analysis of chemical data. Implementation of the Biological Opinion should afford listed species needed protection from a variety of pesticides that are already in use through restrictions on their application. The EPA is committed to implementation as soon as reasonably possible.

See next month's BULLETIN for more news on the Biological Opinion.

Division of Endangered Species and Habitat Conservation (EHC) staff conducted three workshops during the week of May 15 on Section 10/404 permits, Farm Bill (Food Security Act) conservation activities, and the Emergency Wetland Resources Act. Discussion topics included the importance of these activities to protecting and recovering threatened and endangered species. Numerous Washington, Regional, and field office staffers attended.

Participants in the Section 10/404 Permits Workshop discussed new developments related to wetlands and wetland regulation, the new *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, and future priorities. Those attending the Farm Bill Workshop exchanged information on wetland restoration plans for 1989, identified common problems and solutions with "Swampbuster" and Farmers Home Administration activities, and considered the need for a second national Farm Bill workshop. Participants in the Emergency Wetlands Resources Act Workshop discussed implementation of the Act, initiated the development of Regional Wetland Concept Plans, and outlined methods for interacting with the States to develop State Wetland Conservation Plans under the Statewide Comprehensive Outdoor Recreation Plans program.

On May 18, two staff members of the Environment Administration of the Republic of Korea visited the EHC staff. Ms. Koo A-Mi and Ms. Lee Cheong-mi are part of

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Condor Population Continues to Grow

A total of four California condor (*Gymnogyps californianus*) eggs have hatched this year, the latest on June 6. All four chicks are healthy and doing well. No others are expected this breeding season. The total California condor population now stands at 32 birds, all of them in captive breeding flocks at the San Diego Wild Animal Park and the Los Angeles Zoo.

On May 24, an Andean condor (*Vultur gryphus*) egg hatched at the San Diego Wild Animal Park. This chick is being cared for by two California condors, AC4 and UN1, who are the parents of three of the captive-conceived chicks. This is the

first Andean condor chick to be cared for by California condors. It is being done as an experiment to test the parental skills of the captive California condors. This Andean condor will be released in South America within the next year.

The Andean condors that were shipped to Colombia from captive breeding facilities in the United States earlier this year arrived at their new home safe and sound. As of early June, the birds were in their hack box outside of Bogota, adjusting to their new surroundings. Two Service biologists are observing and assisting the Colombian biologists.

Final Listing Rules Approved for Three Mammals

During May of 1989, Endangered Species Act protection was extended to two Florida subspecies of beach mice and to the Chinese river dolphin:

Two Florida Beach Mice

The Anastasia Island beach mouse historically ranged along the Atlantic coastal dunes from the mouth of the St. Johns River south to the end of Anastasia Island. A recent survey located the mouse only on Anastasia Island, where its remaining habitat is fragmented and its populations are small. Viable populations may remain only at the ends of the island, along the publicly owned dune grasslands of Anastasia State Recreation Area, and

at Fort Matanzas National Monument. Much of the mouse's habitat has been developed for houses and condominiums. A proposed bridge replacement across the Matanzas Inlet could adversely affect the mouse's habitat in the monument area. Competition from house mice (*Mus musculus*) and predation from house cats (*Felis catus*) also pose a threat to the beach mice.

The southeastern beach mouse, a related subspecies, formerly occurred on the Atlantic beach dunes from Ponce Beach, Florida. Today, this mouse is common only at Cape Canaveral and is found in smaller numbers at Cape Canaveral National Seashore (where beach erosion

may soon threaten its habitat). Only a few small, fragmented populations remain from Sebastian Inlet to Hutchinson Island. Beachfront development has destroyed or severely disrupted the mouse's habitat in the southern part of its range and the subspecies no longer occurs in this area. House cats also may pose a serious threat.

The Fish and Wildlife Service proposed listing the Anastasia Island beach mouse as Endangered and the southeastern beach mouse as Threatened in the July 5, 1988, *Federal Register* (see BULLETIN Vol. XIII, No.8), and the final rule was published May 12, 1989.

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Pesticide Program

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to move northward into central Florida to feed and nest. It is during drought years that the snail kite comes in closer contact with agriculture. We hope that, by mon-

itoring the water levels within the conservation areas, we can anticipate when snail kites will move into drought areas. At such times, the plan's pesticide use program will go into effect in these areas. At other times, when the snail kites are back in the water conservation areas, applications of pesticides in central Florida should not affect this species. The Florida task force plans to develop the next prototype plan for another bird, the wood stork (*Mycteria americana*).

Florida plans to develop its own education program to inform pesticide users about the potential impacts of their activities on endangered species. The task force believes that if users are aware of endangered species and their needs, they are more likely to comply with protective use programs. The Florida Department of Agriculture and Consumer Services also has received a substantial grant from the EPA to develop a computer mapping system for endangered species in Florida. This program allows pesticide users to spot potential problems before they arise. By overlapping agricultural use areas with endangered species distributions, regulators can foresee potential problems.

The Jacksonville, Florida, Field Office of the U.S. Fish and Wildlife Service is represented on the Governor's Task Force. So far, the Service has assisted in the preparation of endangered species distribution maps and the prototype snail kite plan. By providing assistance at this early planning stage, the Service can ensure that the programs established will provide as much protection as possible for endangered species while minimizing the effects on pesticide users.

(For more on the endangered species/pesticide consultation, see the Region 9 section of Regional News in this BULLETIN.)



photo by Alexander Sprunt, IV

The wood stork will be the subject of Florida's next species plan.

Listing Proposals

(continued from page 5)

plants do not survive, or developed for a variety of purposes. Road construction and urbanization could eliminate populations of the plant in the rapidly growing Jacksonville area.

Florida already considers Bartram's ixia a *threatened species* under State law and it will be reclassified to endangered (effective October 1, 1989). If the Service's May

19, 1989, proposal to list the plant federally as an Endangered species is approved, the provisions of the Endangered Species Act will offer additional protection.

* * * Conservation Measures

Among the conservation benefits provided to a species if its listing under the Endangered Species Act is approved are: protection from adverse effects of Federal activities; restrictions on take and trafficking; the requirement for the Service to

develop and implement recovery plans; the authorization to seek land purchases or exchanges for important habitat; and the possibility of Federal aid to State and Commonwealth conservation departments that have Endangered Species Cooperative Agreements with the Service. Listing also lends greater recognition to a species' precarious status, which encourages further conservation efforts by State and local agencies, independent organizations, and concerned individuals.

Section 7 of the Act directs Federal agencies to use their legal authorities to further the purposes of the Act by carrying out conservation programs for listed species. It also requires these agencies to ensure that any actions they fund, authorize, or carry out are not likely to jeopardize the survival of a listed species. If an agency finds that one of its activities may affect a listed species, it is required to consult with the Service on ways to avoid jeopardy. For species that are proposed for listing and for which jeopardy is found, Federal agencies are required to "confer" with the Service, although the results of such a conference are not legally binding.

Further protection is authorized by Section 9 of the Act, which makes it illegal to take, possess, transport, or engage in interstate or international trafficking in listed animals except by permit for certain conservation purposes. For plants, it is unlawful to collect or maliciously damage any listed species on lands under Federal jurisdiction. Removing or damaging listed plants on State and private lands in knowing violation of State law or in the course of violating a State criminal trespass law also is illegal under the Act. In addition, some States have their own more restrictive laws specifically against the take of State or federally listed plants and animals.



photo by David Martin

Bartram's ixia produces one or two violet flowers about 2 inches (5 cm) across from April to late June.

Regional News

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Final Listings

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Chinese River Dolphin (*Lipotes vexillifer*)

The Chinese river dolphin is found primarily in the lower and middle sections of the Chang Jiang (Yangtze) River in the east-central region of mainland China. The dolphin was originally proposed for listing as an Endangered species by the National Marine Fisheries Service in the May 18, 1988, *Federal Register* (see BULLETIN Vol. XIII, Nos. 6-7). Over the

last 35 years, increasing industrial activity, boat traffic, and exploitation of fish resources have combined to degrade the Chinese river dolphin's habitat. Reduction in prey availability due to loss of important nursery areas, overfishing, and pollution also may have played an important role in the dolphin's decline. Other factors adversely affecting the species include accidental entanglement in fishermen's bottom longlines, incidental entrapment in fish traps and gillnets, and explosions associated with construction projects and illegal fishing. The final rule listing the species as Endangered was published May 30, 1989.

the Korea national flora and fauna survey program at the National Ecosystem Research Center, which is modeled after a similar project in Japan. Korea is starting to establish a preserve system and an inventory of species (both common and rare). Korea is not a party to CITES.

The purpose of the biologists' visit was to obtain background information on how the U.S. Endangered Species Act and implementing programs work. General topics discussed included listing and recovery activities; protection of listed species from take and trade; habitat protection; Federal aid to the States; import and export permits; cooperative international activities; research; and the organizational structure that carries out these functions.

BOX SCORE OF LISTINGS AND RECOVERY PLANS

Category	ENDANGERED			THREATENED			SPECIES TOTAL	SPECIES WITH PLANS
	U.S. Only	U.S. & Foreign	Foreign Only	U.S. Only	U.S. & Foreign	Foreign Only		
Mammals	32	19	241	6	2	23	323	24
Birds	61	15	145	7	3	0	231	57
Reptiles	8	7	59	14	4	14	106	22
Amphibians	5	0	8	3	1	0	17	5
Fishes	45	2	11	24	6	0	88	47
Snails	3	0	1	6	0	0	10	7
Clams	32	0	2	0	0	0	34	22
Crustaceans	8	0	0	1	0	0	9	4
Insects	10	0	0	7	0	0	17	12
Arachnids	3	0	0	0	0	0	3	0
Plants	153	6	1	40	6	2	208	85
TOTAL	360	49	468	108	22	39	1046*	285**

Total U.S. Endangered **409**

Recovery Plans approved: 245

Total U.S. Threatened **130**

Total U.S. Listed **539**

* Separate populations of a species that are listed both as Endangered and Threatened are tallied twice. Those species are the leopard, gray wolf, grizzly bear, bald eagle, piping plover, roseate tern, Nile crocodile, green sea turtle, and olive ridley sea turtle. For the purposes of the Endangered Species Act, the term "species" can mean a species, subspecies, or distinct vertebrate population. Several entries also represent entire genera or even families.

** More than one species are covered by some recovery plans, and a few species have separate plans covering different parts of their ranges. Recovery plans are drawn up only for listed species that occur in the United States.

Number of Cooperative Agreements signed with States and Territories: 51 fish & wildlife
June 30, 1989 36 plants

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ENDANGERED SPECIES

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